PROCEEDINGS

OF THE

American Pharmaceutical Association

AT THE

TENTH ANNUAL MEETING

HELD IN

PHILADELPHIA,

SEPTEMBER, 1862,

WITH THE

CONSTITUTION AND ROLL OF MEMBERS.

PHILADELPHIA:
MERRIHEW & THOMPSON, PRINTERS,
Lodge Street, Corner of Kenton Place.
1862.

Officers of the Association.

1862–63.

PRESIDENT.

WILLIAM PROCTER, Jr., ...	Philadelphia, Pa.

VICE-PRESIDENTS.

1st. John Milhau, ...	New York City.
2d. Eugene L. Massot, ...	St. Louis, Mo.
3d. J. Faris Moore, ...	Baltimore, Md.

TREASURER.

Henry Haviland, ...	New York City.

RECORDING SECRETARY.

P. W. Bedford, ...	New York City.

CORRESPONDING SECRETARY.

John M. Maisch, ...	Brooklyn, N. Y.

EXECUTIVE COMMITTEE.

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Wm. J. M. Gordon, ...	Cincinnati, Ohio.
Samuel M. Colcord, ...	Boston, Mass.

Recording Secretary, *ex officio.*

COMMITTEE ON THE PROGRESS OF PHARMACY.

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W. Neergaard, ...	New York City.
J. Jacob Thomsen, ...	Baltimore, Md.
E. W. Sackrider, ...	Cleveland, Ohio.

Corresponding Secretary, *ex officio.*

List of Officers of the Association

SINCE ITS ORGANIZATION.

PRESIDENTS.

DANIEL B. SMITH,	Philadelphia,	1852–53
WILLIAM A. BREWER,	Boston,	1853–54
WILLIAM B. CHAPMAN,	Cincinnati,	1854–55
JOHN MEAKIM,	New York,	1855–56
GEORGE W. ANDREWS,	Baltimore,	1856–57
CHARLES ELLIS,	Philadelphia,	1857–58
JOHN L. KIDWELL,	Georgetown, D. C.,	1858–59
SAMUEL M. COLCORD,	Boston,	1859–60
HENRY T. KIERSTED,	New York,	1860–62
WILLIAM PROCTER, JR.,	Philadelphia,	1862–63

FIRST VICE-PRESIDENTS.

GEORGE W. ANDREWS,	Baltimore,	1852–53
GEORGE D. COGGESHALL,	New York,	1853–54
HENRY T. CUMMINGS,	Portland, Me.,	1854–55
C. B. GUTHRIE,	Memphis, Tenn.,	1855–56
JOHN L. KIDWELL,	Washington, D. C.,	1856–57
JAMES COOKE,	Fredericksburg, Va.,	1857–58
EDWARD R. SQUIBB,	Brooklyn, N. Y.,	1858–59
WILLIAM PROCTER, JR.,	Philadelphia,	1859–60
WILLIAM J. M. GORDON,	Cincinnati,	1860–62
JOHN MILHAU,	New York,	1862–63

SECOND VICE-PRESIDENTS.

SAMUEL M. COLCORD,	Boston,	1852–53
ALEXANDER DUVAL,	Richmond, Va.,	1853–54
JOHN MEAKIM,	New York,	1854–55
CHARLES ELLIS,	Philadelphia,	1855–56
FREDERICK STEARNS,	Detroit, Mich.,	1856–57
S. P. PECK,	Bennington, Vt.,	1857–58
JAMES O'GALLAGHER,	St. Louis, Mo.,	1858–59
JOSEPH ROBERTS,	Baltimore,	1859–60
WILLIAM S. THOMPSON,	Baltimore,	1860–62
EUGENE L. MASSOT,	St. Louis, Mo.,	1862–63

THIRD VICE-PRESIDENTS.

C. AUGUSTUS SMITH,	Cincinnati,	1852–53
C. B. GUTHRIE,	Memphis, Tenn.,	1853–54
JOSEPH LAIDLEY,	Richmond, Va.,	1854–55
H. F. FISH,	Waterbury, Ct.,	1855–56
H. T. KIERSTED,	New York,	1856–57
A. E. RICHARDS,	Plaquemine, La.,	1857–58
R. BATTEY,	Rome, Ga.,	1858–59
EDWIN O. GALE,	Chicago, Ill.,	1859–60
THEODORE METCALF,	Boston,	1860–62
J. FARIS MOORE,	Baltimore,	1862–63

TREASURERS.

ALFRED B. TAYLOR,	1852–54	S. M. COLCORD,	1857–59
S. M. COLCORD,	1854–56	ASHEL BOYDEN,	1859–60
J. S. ASPINWALL.	2856–57	HENRY HAVILAND,	1860–63

RECORDING SECRETARIES.

GEO. D. COGGESHALL,	1852–53	W. J. M. GORDON,	1855–58
EDWARD PARRISH,	1853–54	CHARLES BULLOCK,	1859–60
EDWARD S. WAYNE,	1854–55	JAMES T. SHINN,	1860–62
P. W. BEDFORD,	1862–63		

CORRESPONDING SECRETARIES.

WILLIAM PROCTER, JR.,	1852–53	AMBROSE SMITH,	1858–59
WILLIAM B. CHAPMAN,	1853–54	WILLIAM HEGEMAN,	1859–60
WILLIAM PROCTER, JR.,	1854–57	P. W. BEDFORD,	1860–62
EDWARD PARRISH,	1857–58	JOHN M. MAISCH,	1862–63

LIST OF COMMITTEES

TO REPORT AT THE ANNUAL MEETING, IN SEPTEMBER, 1863.

EXECUTIVE COMMITTEE.

COMMITTEE ON THE PROGRESS OF PHARMACY.

COMMITTEE ON THE SUBJECT OF LEGAL ENACTMENTS CONTROLLING THE SALE OF POISONS.

(Appointed in New York, 1860.)

SAMUEL M. COLCORD, Boston, *Chairman.*

WILLIAM PROCTER, JR., WILLIAM J. M. GORDON.

COMMITTEE ON THE DRUG MARKET.

EDWARD R. SQUIBB, Brooklyn, N. Y., *Chairman.*

WILLIAM PROCTER, JR., S. M. COLCORD,

CHARLES BULLOCK, A. P. SHARP.

BUSINESS COMMITTEE.

EDWARD R. SQUIBB, Brooklyn, N. Y., *Chairman.*

SAMUEL M. COLCORD, JOHN J. THOMSEN.

COMMITTEE TO BRING FORWARD A LIST OF QUERIES TO BE ADDRESSED TO MEMBERS.*

WILLIAM PROCTER, JR., Philadelphia, *Chairman.*

JOHN M. MAISCH, CHARLES BULLOCK,

J. FARIS MOORE, P. W. BEDFORD.

*[For List of Queries addressed to members on special subjects of investigation, to be answered at the Annual Meeting in 1863, see pages 44 to 47.]

SUBJECTS FOR PRIZES

OPEN TO GENERAL COMPETITION,

The awards to be determined and adjudged by a Committee to be appointed at the meeting in 1864.

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1. An Essay on Cimicifuga racemosa in its Chemical and Pharmaceutical Relations and Medicinal Uses.

2. An Essay based on a Practical and successful Experiment on the Culture and Preparation of Elaterium in the United States, accompanied by a specimen of the Product, of not less than 120 grains.

CONTENTS.

Special Reports and Essays.

Appendix.

PREFATORY NOTES.

The present volume, the tenth of the series, is issued, as its predecessors, by the Chairman of the Executive Committee. In the extent and variety of its contents, it falls short of most of the annual issues of the Proceedings, but it is a cause of congratulation that the Association should have held a meeting so fraught with interest and profit to those in attendance, and should be able to issue such an exhibit of Pharmaceutical progress, at a time when most voluntary National organizations have yielded to the storm which is still desolating our beloved country.

The labors of the Chairman of the late Committee on the Progress of Pharmacy which necessarily extended over two. years, owing to the omission of our annual meeting in 1861, have supplied to the present volume its leading feature of interest. The classification of subjects in that report greatly increases its usefulness and the facility with which it can be consulted, while the paucity of original American investigations in the last two years is counterbalanced by the full and accurate statements of the results obtained by our indefatigable foreign co-laborers, especially those of continental Europe.

The necessity of sending a proof and revise of the whole of this elaborate report for examination and correction by its author in New York, has delayed the issue of the volume for several weeks longer than would otherwise have been necessary;

but while we have thus secured much greater accuracy in the execution of the printing, we know of no interest which has been injured by the unavoidable delay.

The omission to secure stenographic reports of the discussions which took place during the sessions, has been supplied to some extent from the memoranda of the Secretary and the memory of the compiler; the extemporaneous debates at the late meeting were, however, much less extended, and with a few exceptions occupied with subjects of less general interest than those of the next previous meeting. The absence of any reports on the subject of adulterations, the sale of poisons, the "drug law" and other topics of universal interest, while it has materially lessened the extent of the present volume, also deprived members of the occasion for much of the kind of discussion reported in the last volume of Proceedings.

Through inadvertence, no definite action was taken by the Association, at its meeting, in regard to the continuance of the *Committee on the Sale of Poisons*, which Committee, it will be observed, failed to furnish a written report. In accordance with the remark of the late President in his address, that, in view of the importance of the subject, and in consideration of the labor which has already been bestowed upon it, he recommended the continuance of the Committee, we have placed this on the list of committees to report next year.

The appointment of a *Business Committee* to hold over to the next annual meeting, will furnish to any member who is unable to attend, a channel of communication with the Association, by which any suitable proposition may be brought before it for consideration. The supervision of this Committee over the neglected items of business, will, it is hoped, obviate some of the disadvantages resulting from the variable attendance, the frequent change of officers, and the want of strict adherence to parliamentary usage, which have caused some of the Resolutions of acknowledged utility to fail for want of being put to vote, while others which have been adopted are entirely overlooked at the future meetings. It is respectfully suggested that a compilation of the Resolutions which have been adopted on subjects connected with the management of the affairs of the Asso-

ciation, the duties of its members, Committees, &c., should be arranged for future publication and easy reference.

The *Committee to prepare a list of Queries* to be allotted at the next annual meeting, having the whole recess to mature their report, will doubtless be able to furnish a better list, and one which by judicious apportionment among the working members will call forth an increased number of useful additions to knowledge; to this end, members to whom subjects of inquiry present themselves, whether such as they are willing to report upon themselves, or desire to submit to more capable investigators, will do well to communicate with the Chairman before the next annual meeting. Of the queries allotted at the meeting in 1860, only seventeen have been answered at this time.

The *Committee on the Drug Market* are instructed to report any adulterations coming to their knowledge, through the Journals of Pharmacy, and every member of the Association is earnestly invited to report to them every instance of this kind of fraud occurring within his sphere of observation, that its injurious effects may thus be lessened, and a warning be extended by which similar attempts may be prevented in future. In no way can the members of our Association confer a more direct and obvious advantage on the whole profession and the community, than by a vigilant coöperation in the work entrusted to this Committee.

Applications for Membership are to be made as heretofore to the undersigned, Chairman of the Executive Committee, but it is not the intention to forward all such immediately, and applicants may therefore rest assured, in the absence of any communication from the Committee or the Treasurer, that their applications are reserved till a convenient opportunity to obtain the opinion of the Committee.

The *Suspended List* is omitted from the present volume by direction of the Association, the names being transferred to the Roll of Members, (see page 41,) and the Treasurer is authorized to correspond with members in arrears with reference to the definite action of the Association at the next annual meeting.

Since the adjournment of the annual meeting *sine die*, the Executive Committee have had some correspondence with the

late member who was expelled on account of the improper use of his membership in the Association, in advertising certain nostrums.

A strong appeal was made by him to the Committee to suppress the publication of the part of the Minutes recording this action. The ground taken was that he had received no previous notice of the charges brought against him; that the alleged misdemeanor was originally the result of a misconception or inadvertence on his part, and since the dissatisfaction of members of the Association was made known to him, he had suppressed the objectionable vignette and the use of the altered certificate of membership in his "Calendar," and now acknowledged the error he had unwittingly committed.

The Executive Committee, though desirous of doing all in their power to save their late fellow member from unnecessary disgrace or censure, were united in the belief that their powers did not extend to the suppression or postponement of any deliberate official action of the Association, and that the full discussion of the resolutions of expulsion, and their unanimous adoption by the body as a vindication of its professional standing and self respect, rendered it peculiarly imperative that they should be published in the Proceedings.

It is with deep regret that your Committee have heard of the death, by consumption, of our fellow member, Charles T. Carney, the late Chairman of the Committee on Adulterations. This event, which occurred since the adjournment of the meeting, was not unexpected; it makes the third member of that Committee, who has been removed from among us since the meeting in 1860, when the Committee was intrusted with the subject. On page 12 will be found an extract from a characteristic letter from our late associate, explaining his failure to attend and to perform his share of labor during the past year.

The present volume of Proceedings will be furnished to all the members, by mail, or through the usual channels of distribution, and extra copies will be sold at one dollar each, postage prepaid.

The Index to the first eight volumes of the Proceedings accompanies the present volume, though it does not include the

last issue. A few extra copies in paper will be furnished at twenty-five cents each, so as to be separately preserved, or to be bound up with the volume for 1859, to which it most appropriately belongs.

With these remarks, the work is submitted to my fellow members without apology for its imperfections, and with the full consciousness, that an honest effort has been made to preserve the results of our late meeting as completely and as perfectly as practicable.

EDWARD PARRISH,

Chairman of the Executive Committee.

Philadelphia, 11th month, 1862.

MINUTES

OF THE

TENTH ANNUAL MEETING.

1862.

The Tenth Annual Meeting of the American Pharmaceutical Association commenced its sittings at the Hall of the Philadelphia College of Pharmacy, Philadelphia, on Wednesday, August 27th, 1862, at 3 o'clock P. M.

The meeting, which was to have been held at St. Louis in 1861, had been postponed on account of the National troubles, and but a limited number of members from a distance were now present for the same cause.

The President, Henry T. Kiersted, of New York, called the meeting to order, James T. Shinn, of Philadelphia, acting as Secretary.

The Chair appointed Samuel M. Colcord, of Boston, P. W. Bedford, of New York, and Alfred B. Taylor, of Philadelphia, a Committee on Credentials, and pending their action, requested all members present to enroll their names in the book provided for the purpose.

Samuel M. Colcord, of the Committee on Credentials, reported names of delegates appointed to attend this meeting as follows:

By the Massachusetts College of Pharmacy.—S. M. Colcord, Henry W. Lincoln, Charles T. Carney, Thomas Hollis, and A. P. Melzar.

By the New York College of Pharmacy.—John Milhau, John Meakim, John W. Shedden, P. W. Bedford, Wm. Wright, Jr.

By the Philadelphia College of Pharmacy.—Samuel F. Troth, Daniel B. Smith, Elias Durand, Edward Parrish, and James T. Shinn.

By the Maryland College of Pharmacy.—J. J. Thomsen, N. Hynson Jennings, J. Faris Moore, Jonas Winter, and J. Brown Baxley.

The Chairman of the Executive Committee reported the following members as having been elected since the last meeting of the Association.

Charles C. Thornton, Sharon, Miss.	Theobald Frohwein, New York City
Fairman S. Taber, Huntsville, Ala.	R. S. McMurdy, Albany, N. Y.
Edward R. Fell, Philadelphia, Pa.	Thomas S. Maffitt, Boston, Mass.
Frederick A. Keffer, " "	Laban Beal, " "
A. S. White, Mount Holly, N. J.	Nathan F. Peck, Willimantic, Conn.
Francis M. Basset, Brooklyn, N. Y.	J. R. Carpenter, Calais, Maine.
John A. Niebrugge, " "	George J. Waugh, Hamilton, C. W.
S. F. Conway, " "	Robert J. Brown, Leavenworth, Kansas.
George S. Peduzi, New York City,	Andrew J. Tully, Cincinnati, Ohio.
Bernhard H. Reinold, " "	John C. Gerhard, " "
Adolph G. Dunn, " "	
James S. Higgins, New York City,	

The following named gentlemen were brought forward by the Executive Committee as Candidates for membership, viz:—

Wm. J. Allinson, Burlington, N. J.	David Howath, Andover, Mass.
W. Fisher, New York City.	Benj. Gilpatrick, Jr., Boston, Mass.
A. W. Gabaudan, New York City.	Wm. H. Squire, Germantown, Pa.
William H. MacRae, Factoryville, Staten Island, N. Y.	Frederick Rollman, Philada., Pa.
Henry W. Lesley, Bristol, Pa.	Ferris Bringhurst, Wilmington, Del.

A ballot being ordered, the President appointed Wm. Wright, of New York, and Edward Parrish, of Philadelphia, to act as tellers, who reported their unanimous election.

The roll being now called for the first time, twenty-four members answered as being present, as follows:

Henry T. Kiersted, New York.	E. R. Squibb, Brooklyn, N. Y.
Samuel F. Troth, Philadelphia.	Leander Neal, Lancaster, Pa.
Samuel M. Colcord, Boston Mass.	Henry Haviland, New York.
P. W. Bedford, New York,	John M. Maisch, Brooklyn, N. Y.
Wm. Neergaard, New York.	Edward Parrish, Philada, Pa.
Ferd. F. Mayer, New York.	Thomas P. James, Philada., Pa.
Ferris Bringhurst, Wilmington, Del.	James T. Shinn, Philada., Pa.
Wm. Wright, Jr., New York.	Wm. Procter, Jr., Philada., Pa.
Wm. J. Allinson, Burlington, N. J.	Alfred B. Taylor, Philada., Pa.
J. Faris Moore, Baltimore, Md.	William Evans, Jr., Philada. Pa.
John J. Thomsen, Baltimore, Md.	Evan T. Ellis, Philada. Pa.
Jonas Winter, Baltimore, Md.	Wilson H. Pile, Philada., Pa.

The following were present at subsequent sittings:

Elias Durand, (delegate,) Philada.
John Milhau, (ditto,) New York.
Edwin R. Smith, Monmouth, Ill.
Geo. C. Close, Brooklyn, N. Y.
Henry N. Rittenhouse, Philada.
Geo. J. Scattergood, Philada.
E. W. Sackrider, Cleaveland, Ohio.
Ambrose Smith, Philada.
Charles Bullock, Philada.
James Stratton, Bordentown, N. J.
Adam H. Wilson, Philada.
Daniel S. Jones, Philada.
John C. Savery, Philada.
Thomas S. Wiegand, Philada.
Samuel Chapman, Philada.
George Y. Shoemaker, Philada.
Charles Shivers, Philada.

In explanation of the absence of some members who are usually in attendance on the meetings of the Association, the Chairman of the Executive Committee read extracts from letters received by him, from which the following selections are made for publication, as directed by the Association, though without consulting with their authors.

E. L. Massot, of St. Louis, in a letter dated August 16th, says:

"I should have written to you, but up to the present time expected to report in person; the recent order of the United States government, and that of the State of Missouri, will keep me at home. . . . . . So I have concluded to remain at my post, and the amount I would lay out for my expenses in attending the Convention, I will contribute to the fund for the relief of the families of soldiers"

Geo. W. Andrews, of Baltimore, under date of August 18th, writes:

"Owing to the illness of Mr. Thompson, who was under medical treatment nearly all last winter, and the constant state of excitement in our city, I was not able to attend to my duty as one of the Committee on Adulterations. . . . . . Mr. Thompson will not be home until the first of September, which will prevent my being at the next meeting."

A letter from Wm. S. Thompson, of Baltimore, also explains his necessary absence from the meeting.

John D. Dix, of New York, writing from his summer retreat in Connecticut, says:

"It will be out of my power to attend the meeting of the Association . . . I wish the Association all possible success, but think it of little use to meet until the wicked rebellion is crushed out."

A. P. Sharp, of Baltimore, writes, August 22d, 1862.

"I hope you will have a full attendance of members, and the meeting prove to be an interesting, as well as useful one. As for my part it will be impossible to be there, but I will look for your proceedings with much interest."

From W. J. M. Gordon, of Cincinnati, the following was received, under date August 23d.

"I am forced reluctantly to give up all hope of meeting with you, although I have so long looked forward to the meeting with so many friends, but it is an absolute necessity. No one can leave here unless he gives bonds to return by the 3d of September, and I could not get back in time. My heart is with you, and I hope the meeting will be an interesting one."

Geo. W. Weyman, of Pittsburgh, writes August 23d, as follows:

"I regret to say that owing to the enlistment of one of my clerks, I cannot leave my business, and am unable to attend the meeting of our Association, and moreover, cannot report fully on the two subjects accepted by me at our last meeting. I have collected much matter for my two essays, but it has been impossible to find time to digest it, and put it in proper shape. I had looked forward to a pleasant and profitable visit, and nothing but absolute necessity compels me to forego it." . . .

Charles T. Carney, of Boston, writes August 10th.

"I fully agree with you in all that would add to the success of our next meeting, but am compelled to relinquish all hope of being present with you all, or even of doing anything whatever for our cause. I am physically unable, and have been an invalid for some six months. I regret very much not being able to do my share this year. I have always tried to do it, and it has been a source of great pleasure to me."

Mr. Parrish, on behalf of the Committee of Arrangement, and reception of the Philadelphia College of Pharmacy, informed the non-resident members that they design to furnish each with a map and guide to the city, with tickets to the principal public institutions, and with a circular giving the proper times of visiting these, and the best modes of conveyance, which were accordingly distributed to those present.

The President having called for the Report of the Executive Committee, it was read by the Chairman, William Procter, Jr., and laid on the table for future consideration.

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee, in accordance with a Constitutional requirement, present at this Session their Report, which for the first time is biennial, for reasons but too well known to us all. In casting a retrospective glance over the period which has elapsed since our last meeting—a period marked with political convulsions and commercial prostration, altogether without a parallel in the past history of our country, we esteem it a cause for thankfulness that we are again met together as a body, in pursuance of the important interests which our Association involves, and claim your attention to the following record of the proceedings of the Committee since its appointment:—

Immediately after the adjournment in 1860, most of the Reports and papers to be included in the volume of "Proceedings" for that year, were arranged and placed in the hands of the printer. A portion of the manuscript, that of Drs. Thomas and Donnelly, and the stenographic reports of the minutes by Dr. Shrady were not ready, but these did not delay the progress of the work. The size of the volume proved to be much less than had been anticipated. The proof sheets received earnest attention, which, however, did not prevent the occurrence of several errors, the more important of which were corrected in the prefatory note. An edition of 1000 copies was printed and all of them bound in muslin for better preservation.

In the distribution of the book, it was determined to forward the copies for members in the larger cities to an individual in each place. All the others were sent by mail, post-paid, at a cost of 20 cents each, except those for the California members, for each of which 40 cents was paid.

Henry Haviland, New York,	received	125	copies,	80	members.
Charles T. Carney, Boston,	"	125	"	96	"
William S. Thompson, Baltimore,	"	52	"	33	"
Wm. J. M. Gordon, Cincinnati,	"	25	"	10	"
Eugene L. Massot, St. Louis,	"	50	"	9	"
John L. Kidwell, Washington,	"	26	"	23	"
		403	"	251	"
Sent by mail,		160	"		
To Libraries and Journals,		30	"		
To Germany, 6 copies 1859; and in 1860,		6	"		
To England, 5 " " " "		7	"		
Members, &c., in Philadelphia,		57	"		
		663	"		

Balance of Proceedings of 1860 in store at the Hall of the Philadelphia College of Pharmacy, 290 copies.

Balance of Proceedings of		1859,	93	"
"	"	1858, bound,	189	"
"	"	1857,	170	"
"	"	1856,	43	"
"	"	1855, (out of print.)		"
"	"	1854, "		"
"	"	1853,	250	"

The expenses attending the publication of the Proceedings of 1860 are as follows,—viz.:

For paper and printing 1000 copies,	$407.26
For Binding,	158.50
For enveloping 500 copies for mailing,	4.50
For Engraving, &c., illustrations to Garlic Hacæ,	32.50
	$602.66

The expenses attending the distribution of the books are as follows:

For Packing boxes,	$2.35
For Freight and express charges,	8.00
For porterage,	2.00
Postage stamps for mailing Proceedings,	35.50
Shaeffer and Koradi for transportation of Proceedings to Europe,	3.50
	$51.35

The issuing of the certificate of membership during the interim now devolving on the Treasurer, the number issued will be appropriately found in the Report of that officer.

Twenty-two gentlemen were admitted to membership in the interim, according to the provisions of the Constitution; their names have already been reported.

The Committee desire to call the attention of the Association to the clause in the Constitution in reference to admission of members in the recess; members requiring the unanimous assent and approval in writing of this Committee and the President, which, with the signature of the applicant and of his sureties, is placed on file.

In the last interval, twenty such applications had to be mailed from Philadelphia to Baltimore, thence to Pittsburgh, thence to Dover, N. H. thence to New York, and finally back to Philadelphia, involving a delay often of two weeks, and an expense of 18 cents on each application. We would suggest that the approval of the President and two members of the Executive Committee, should be sufficient for granting membership in the interim.

During the past year several members of our Association have ceased

from their earthly labors, thus reducing our numbers, and admonishing us, that we also are hastening on towards the terminus of the voyage of life. So far as we have been able to learn, the following is a list of the members deceased during the past two years:

Joseph Laidley,	Richmond,	Virginia.
Charles Augustus Smith,	Cincinnati,	Ohio.
Charles A. Junghanns,	Cincinnati,	Ohio.
Alexander Cushman,	New York,	New York.
Walter S. Coon,	New York,	New York.
Henry C. Blair,	Philadelphia,	Pen'a.
John W. Barry,	Baltimore,	Maryland.

Joseph Laidley, it will be remembered, attended our last meeting at New York, and was one of the very few Southern members there present. Mr. Laidley was of Irish descent, and was educated in Philadelphia, where he resided until he attained his majority. Having graduated at the Philadelphia College of Pharmacy in 1850, he soon afterwards removed to Richmond, Va., where he continued to reside until his death, in May, 1861, which occurred in a shocking manner, from the premature explosion of a quantity of fulminating mercury, in the preparation of which he voluntarily engaged for the Confederate authorities. Mr. Laidley was formerly an active member of this Association, and in 1854—5, was one of its Vice Presidents. As a pharmaceutist he was able and energetic, and has left on record several papers and essays.

Charles Augustus Smith, died in Cincinnati, Ohio, on the 19th of March, 1862, of congestion of the brain, aged 52. Mr. Smith was educated in Philadelphia; subsequently he removed to Cincinnati, and there acquired considerable reputation as an accurate and efficient pharmaceutist, and at the time of his decease he was editor of "The Druggist," a pharmaceutical Journal, published in that city. Mr. Smith,was a delegate from the Cincinnati College of Pharmacy to the Convention that organized this Association in 1852, at Philadelphia, and was one of its Vice Presidents for that year; and when subsequently present at its meetings, he took an active part in its proceedings. In social life he was a genial companion, and possessed a wide circle of friends who regret his loss.

Charles A. Junghanns, attended our last meeting, having recently before visited his friends in Germany. He was an earnest man, and as a pharmaceutist stood well with his brethren. When the dark cloud of disunion first threatened the West, Junghanns raised a company in Cincinnati, and as its Captain joined the army of Buell. Naturally not robust, the exposure incident to his new life affected his lungs. At the battle of Shiloh, his loss of voice having rendered him unable to perform his duty as an officer, he deliberately put his first Lieutenant in command of his company, and taking a rifle fought with great coolness and precision. until he fell from a wound in his head.

Mr. Junghanns was an advocate of pharmaceutical education, and in his death our Association has lost a valuable member.

Alexander Cushman, shortly after the last meeting of the Association, became ill in health, and sought a Southern climate in the fall of 1860. Early in 1861, on his return North, he became more indisposed, whilst at Richmond, Virginia, and there died. Mr. Cushman was generally esteemed among his pharmaceutical associates in New York, and is well known to have been an active member of this body.

Henry C. Blair was eminent as a pharmaceutist in Philadelphia. Born in Carlisle, Pennsylvania, he early came to Philadelphia, and in the employ of Franklin R. Smith, learned the business of an apothecary. He graduated creditably at the Philadelphia College of Pharmacy in 1836; and soon after succeeded to the business of his employer. Liberal in his views of pharmaceutical education, he was earnest in promoting it among his numerous apprentices, and before his health became infirm, he took an active interest in the Philadelphia College of Pharmacy. In later years, however, he has labored under the effect of a hœmorrhage of the lungs, which, after a long combat, finally carried him off quite suddenly on the 19th of August. The manners of Henry C. Blair were very engaging, and his kind disposition rendered his circle of friends wide and numerous.

It will perhaps be well, here, to request that should any member present, or who may hereafter read this report, be acquainted with the fact of the decease of a member or members of the Association, that he communicate it to the Chairman of the Executive Committee.

The subjects appropriate to this report having been presented, the Committee here conclude, after expressing their earnest wishes for the success and advancement of the Association.

WILLIAM PROCTER, JR., *Chairman.*
CHARLES A. TUFTS,
JAMES BALMER,
GEO. W. WEYMAN,
JAMES T. SHINN, *Committee.*

John M. Maisch, Chairman of the Committee on the Progress of Pharmacy, produced a report, and stating that it was of great length, proceeded to read certain parts, and to give a synopsis of its contents for the information of the Association, showing it to be a complete exposition of the state and progress of Pharmacy for the past two years, arranged in systematic order. On motion, it was laid on the table, to be called up at a future time, for further reading and consideration.

Invitations from the Academy of Natural Sciences, of Philadelphia, and from the U. S. Army Department of the Episcopal

Hospital, for members of the Association to visit those institutions, were received and read by the Secretary, and, on motion, he was directed to return the thanks of the Association therefor.

Reports of Special Committees being in order, that on "Adulterations" was called for, and the Chairman of the Executive Committee informed that the Chairman of the Committee, Charles T. Carney, of Boston, had been ill for many months, and wholly unable to accomplish the report; that two other members of the Committee had died since the last meeting, and the remaining members were unaware of Mr. Carney's illness until too late to prepare a Report.

Samuel M. Colcord, Chairman of the Committee on the Sale of Poisons, stated that no report had been prepared, owing to the postponement of the meeting last year, and the uncertainty of there being one this, until May last, since which time his business and other engagements have prevented it.

The object of the appointment of the Committee to promote the attendance of Members at St. Louis, being defeated by the failure of that meeting in 1861, said Committee had no report to make.

It being now in order to appoint a Committee for the nomination of Officers to serve during the ensuing year, the delegations present selected the following gentlemen in accordance with a constitutional provision.

Samuel M. Colcord,	of the	Massachusetts	College of	Pharmacy.
P. W. Bedford,	"	New York	"	"
Edward Parrish,	"	Philadelphia	"	"
J. Jacob Thomsen,	"	Maryland	"	"

To whom the President added:

Ferdinand F. Mayer,	of	New York.
Ferris Bringhurst,	"	Wilmington, Delaware.
J. Faris Moore,	"	Baltimore.

Dr. Squibb, Chairman of Committee to bring forward deferred business, reported that he had a list of subjects postponed from the last meeting, to be brought forward at the proper time.

After some discussion on the propriety of holding an evening Session, which was not agreed to, the President read his interesting and suggestive Annual Report, as follows:

2

PRESIDENT'S ADDRESS.

Gentlemen of the American Pharmaceutical Association:

Two years have elapsed since we were last together. The little cloud-speck that then hung, almost unnoticed, in the horizon, has since burst, with destructive fury, over our whole country. Which of us—as we parted at New York, after a meeting characterized by frank cordiality on the part of the members of the Association, as well as by a course of proceedings unusually attractive and profitable,—which of us could have foreseen that, within a twelve-month, we should be involved in all the horrors of a civil war; that the sections which we then represented in the cause of peace and science, were soon to be arrayed against each other in deadly strife; that many of ourselves should soon be personally enrolled in vast hostile armaments, whose every movement should carry death and desolation into regions then smiling with plenty, and happy in peace; that the arcana of our own science, consecrated, as it is, to the cause of humanity and to the preservation of life and health, should soon be explored to furnish some means of destruction hitherto unknown to the art of war; that one of our own number, then present in friendly relation with us all, esteemed and respected as a gentleman and a scholar, was destined soon to perish miserably by the very means which his art had enabled him to prepare for the destruction of others; and that the calamity of our country should be recorded upon the Minutes of our Association in the omission of one of our annual meetings?

The retrospect, gentlemen, is a sad one. Two years ago, on assuming the functions with which you then honored me, I congratulated you that the spirit of rancor and sectional jealousy, which marred so many features of our otherwise fair land, had as yet found no resting-place among us. I flattered myself and you that the enlightening influence of truth, and a common devotion to mutual improvement, afforded us a reasonable guarantee, for all time, against the access of influences whose vital principles were ignorance and barbarism. How painfully has that illusion been dispelled! How rudely have we been awakened from our hopeful dream, and to what a gloomy reality!

Yet, discouraging as is the prospect, and crippled as we are in the compulsory absence of so many of our associates, your Executive Committee have determined that we should yield no longer to the blast. One annual meeting has been omitted; our duty to ourselves, to the profession, and to the community, summons us once more to the work.

We have, therefore, called this meeting, with an ardent trust that what we lack in numbers we may make up in energy and strength, and that the record of our present proceedings may show, that though surrounded by difficulties, and menaced by adversity, we have acquitted ourselves like men.

The operations of the Association, during the two years just passed, will appear by the reports of the several committees.

Treasurer's Report.

The Report of the Treasurer, which will be presented in order, shows a satisfactory state of our finances. The Association is free from debt, and the balance on hand is considerable.

Executive Committee.

The Report of the Executive Committee is, of necessity, highly important and interesting. The unusually large number of accessions, notwithstanding the embarrassed state of the country, is at once gratifying and encouraging.

Committee on the Progress of Pharmacy.

The Report of the Committee on the Progress of Pharmacy, I have reason to believe, will be very full and of great interest to the Association. It would be superfluous in me to recommend to your careful attention a paper touching upon subjects so important and so intimately connected with the advancement of pharmaceutical science; but I take leave to express the hope that the topics therein mentioned may be thoroughly discussed and freely commented upon by the members of the Association. I know of no way in which the ends of our organization may be more effectually subserved than by a personal appropriation, on the part of each member, of the subject matter of this very paper. Through this Committee, our National body is brought into relation with every important local organization in the country, and by means of their labors, backed by the hearty support of our members, we hope to keep our remotest sections abreast of the most favored localities in point of scientific and professional information.

Committee on Adulterations.

It is with much regret that I have to announce that owing to the protracted illness of the Chairman of the Committee on Adulterations, no report will, in all probability, be presented on that subject. This omission leads me to suggest that, in order to avoid such disappointments in the future, it should be understood that when, from illness, death or other disability on the part of the chairman of any committee, he shall be incapacitated from preparing his report, that duty shall devolve upon some other member of the committee, on the receipt of due notice of the facts from the chairman of the same.

Committee on the Sale of Poisons.

I request, also, to state that there will probably be no report from the Committee on the subject of the Sale of Poisons. It was the intention of the Chairman of that Committee to have presented a very full and

elaborate report on that subject, but circumstances which he could not control, and among them, a painful bereavement, prevented his devoting the requisite time and attention to the preparation of the paper. In view, however, of the importance of the subject, and in consideration of the valuable labor which has already been bestowed upon it, I respectfully recommend that that Committee be continued.

Committee on Deferred Business.

In 1860, the Committee to bring forward deferred business was "continued." The function of that Committee is important, and I trust that the Chairman is prepared to report.

Special Subjects Referred to Individual Members.

From among the special subjects which were referred, at our last meeting, to individual members, and to other persons of scientific reputation, for investigation and report, I have reason to anticipate important and profitable results. I trust, also, that, as hitherto, we may be favored with some valuable voluntary contributions on subjects of interest to us all.

Life Membership.

The seventh section of article two, of the Constitution, provides that "Members who shall have paid their annual contribution for ten successive years, shall be considered life members, and shall be thenceforward exempt from the payment of annual dues, and entitled to a certificate to that effect." As the Association has now been in existence for ten years, I would recommend that a committee be appointed, at this session, to prepare a suitable certificate of life membership; and that the same be furnished to such members as are now or may hereafter become entitled to it.

Suspended List.

I desire to call the attention of the Association to a practice which has become current in the publication of our Annual Proceedings; a practice for which I find no warrant in the Constitution, and which seems to me to be objectionable on other grounds than that of its irregularity. I refer to the "Suspended List," which consists of the names of members who are in default, for three years, of the payment of their annual dues, and which is published, very prominently, at the close of the annual volume of Proceedings.

Now, the fourth section of article two declares that any member shall be *liable* to lose his right of membership by neglecting to pay his annual contribution for three successive years. It confers no authority, however, upon any officer of the Association to execute any penalty upon such delinquent member, much less to expel or suspend him. On the contrary, section third of the same article, expressly declares that all persons who become members shall be considered as *permanent* members, but *may* be

expelled, for improper conduct, by a vote of two-thirds of the members present at any Annual Meeting.

Now, granting, what I very much doubt, that the failure on the part of a member to pay his yearly contribution for the time specified, could be construed into an offence sufficiently grave to warrant his expulsion, the inflicting of that or any other penalty would still require the express and specific action of your own body, in each and every case.

The condition, moreover, of a suspended member, appears to me to be an altogether anomalous one. What is the position—what are the rights and privileges—what the disabilities of such a member? The Constitution does not recognize him even by name; and, as if to illustrate the practical absurdity of such a distinction, we find, in last year's list, the name of a gentleman, who probably quite unconscious of his technical disfranchisment, is now doing duty, and, I hope, doing it well, upon one of our most important committees. Of course, I do not wish to be understood as defending or extenuating delinquency in the matter of dues. No doubt, a member who is in arrears should be called to account; and if the means already provided shall not be found sufficient to insure punctuality in remitting, it is for you to prescribe more vigorous measures, and to appoint the persons to whom their execution is to be entrusted.

The inexpediency of permitting unauthorized action is too obvious to require remark. No official, unarmed with the authority of the Association itself, could be expected to awaken negligent members to the performance of duty, without resorting to measures of severity, like the one I am alluding to, entirely disproportioned to the nature of the offence.

These suggestions, which I most respectfully submit for your consideration, comprise all that appears to require mention by me as regards the conduct of the business of the Association.

It only remains for me to acknowledge my sense of the honor conferred upon me in my being called, so unexpectedly as I was, to preside over your deliberations, and to thank you, individually and collectively, for the generous forbearance which has overlooked my shortcomings, as well as for the considerate and courteous attention which has divested my position of all those annoyances and vexations which so generally fall to the lot of a presiding officer.

In vacating the chair, whose honors and functions are about to devolve upon the successor whom you are now to select, and in subsiding into the more congenial position of a private member, I cannot forbear humbly to express the hope that, before another year shall have rolled around, the clouds which now overshadow our beloved country may have been dispelled forever by the glorious rays of the sun of our Union. The inscrutable decrees of an all-wise Providence, which hurled us in a moment from prosperity and fancied security into disaster and ruin, may yet contain for us some unexpected consolation. The gloom which now surrounds us, it is true, is impenetrable to mortal vision; and, if our trust were in a

human arm alone, we might well be discouraged; but he who can destroy can build again—and in firm reliance upon the Almighty Defender of the Right, I look hopefully forward to the time when the members of this Association shall meet once more from North and South, and East and West—when all sections of our country shall be worthily represented among us by men of peace, and when mutual confidence and good-will shall be restored to our now distracted land.

May our present assembling in this goodly City of Brotherly Love prove a happy omen of the early consummation of our ardent hopes; and may we, through future years, remember this as the dark hour that preceded the day!

On motion, the Address of the President was referred to the Executive Committee for publication.

The meeting then, on motion of Dr. Squibb, adjourned until 9 o'clock to-morrow morning.

Thursday Morning, Aug. 28th, 1862—Second Session.

The Association was called to order near the hour adjourned to, by the President, and the Minutes of last meeting were read and adopted.

On motion of Edward Parrish, the Secretary was directed to engross on the Minutes extracts from letters from absent members to the Chairman of the Executive Committee, giving reasons for their non-attendance.

The Chairman of the Executive Committee reported the name of Edwin R. Smith, of Monmouth, Illinois, as a candidate for membership. A ballot being ordered, the President appointed Wm. Wright, jr., of New York, and Edward Parrish, of Philadelphia, to act as tellers, who reported his unanimous election, and he being in attendance, proceeded to sign the Constitution.

The Committee on Nominations reported the following names for officers and standing committees during the ensuing year, viz:

For President,

WILLIAM PROCTER, JR., . . . Philadelphia.

For Vice-Presidents,

JOHN MILHAU, ... New York City.
EUGENE L. MASSOT, ... St. Louis, Mo.
J. FARIS MOORE, ... Baltimore, Md.

Treasurer,

HENRY HAVILAND, ...	New York City.

Recording Secretary,

P. W. BEDFORD, ...	New York City.

Corresponding Secretary,

JOHN M. MAISCH, ...	Brooklyn, N. Y.

Executive Committee,

EDWARD PARRISH, *Chairman,* . .	Philadelphia.
HENRY F. FISH, ...	Waterbury, Conn.
WM. J. M. GORDON, ...	Cincinnati, Ohio.
SAMUEL M. COLCORD, ...	Boston,
P. W. BEDFORD, *Sec'y. ex-officio,* . .	New York City.

Committee on the Progress of Pharmacy,

FERDINAND F. MAYER, *Chairman,* .	New York City.
W. NEERGAARD, ...	" "
J. JACOB THOMSEN, ...	Baltimore, Md.
E. W. SACKRIDER, ...	Cleveland, Ohio.
J. M. MAISCH, *Cor. Sec. ex-officio,* . .	Brooklyn, N. Y.

On motion, a ballot was ordered for President and Vice-Presidents, when the tellers reported their unanimous election.

On motion of Dr. Squibb, the President was requested to deposit a ballot for the remaining officers and committees; the tellers reported that they were unanimously elected.

Mr. Kiersted now requested Mr. Procter, the President elect, to take the chair, in doing which the latter made the following brief remarks:

"*Gentlemen of the Association:*

"I believe that your partiality and personal good feeling has removed me from a sphere wherein I could operate usefully to the Association, and creditably to myself, to a position for many of the duties of which I am unqualified by ignorance of parliamentary usage. This much I earnestly represented to a portion of the Nominating Committee. In accepting, therefore, this chair, I will endeavor to perform its duties, and

I beg you to remember what has been said, and be as charitable towards my shortcomings as you have been liberal of your good will."

The Secretary then resigned his place to Mr. Bedford, the Secretary *elect*.

On motion of Dr. Squibb, of the Business Committee, the report of the Executive Committee was taken up, when the chairman of that committee stated that an omission was made yesterday in their report, and desired that the Association permit that it be now inserted. Granted.

Dr. Squibb moved that the report of the Executive Committee be accepted and recorded on the minutes. Adopted.

The recommendation in the report regarding the mode of creating members in the interim, was now discussed. Dr. Squibb said that the present plan involved much labor, and thought the time had come when it would be proper to abolish the plan of admitting members in the interim.

Mr. Parrish thought a better plan might be adopted, and suggested that a committee be appointed to consider this subject, and also the future disposition of the "Suspended List" as recommended in the President's annual address.

A motion was adopted to this effect, and the Chair appointed Samuel M. Colcord, Edward Parrish, and J. J. Thomsen, to this duty.

The Treasurer's Report now being in order, it was read by that officer, and on motion of Mr. Kiersted, was referred by the Chair to an auditing committee, consisting of Alfred B. Taylor and William Wright, Jr.

TREASURER'S REPORT.

The Treasurer takes pleasure in reporting a balance of $675 37 in his hands. This amount, though larger than usual, must not be taken as a criterion of what it will be hereafter; for it must be borne in mind, that it is the accumulation of two years, and that last year no publication of Proceedings had to be paid for. I would not recommend any lavish expenditure, for I think that the receipts for the next year will be considerably diminished from various causes. There are a number of names on the books, of persons who have never paid anything, or who have been in arrears for a number of years. The retention of their names adds considerably to the duties of the Treasurer and the expenses of the

Association. I would recommend that some means be taken that their names may be dropped from the books, after addressing them and ascertaining that they have no objection to our so doing.

All of which is respectfully submitted.

HENRY HAVILAND, *Treasurer.*

Philadelphia, August 28, 1862.

American Pharmaceutical Association in account with

HENRY HAVILAND, *Treasurer.*

DR.

1860.					
Sept.	18.	To cash paid		for filling certificates,	$15 50
"	18.	"	"	Postage,	75
"	21.	"	"	Freight on books,	4 25
Oct.	10.	"	"	Postage,	65
"	16.	"	"	Sinclair's bill, printing certificates,	12 00
Nov.	12.	"	"	Merrihew & Thompson, printing Proceedings,	200 00
"	14.	"	"	Sinclair's bill, engraving, &c.,	32 50
"	14.	"	"	Postage,	75
"	14.	"	"	Freight on certificates,	2 14
"	26.	"	"	Executive Committee, bill expenses,	47 42
Dec.	7.	"	"	Merrihew & Thompson, printing Proceedings,	100 00
"	21.	"	"	Postage,	1 30
1861.					
Jan.	7.	"	"	Postage,	4 39
Feb.	24.	"	"	"	26
March	4.	"	"	Merrihew & Thompson, printing Proceedings,	150 00
"	4.	"	"	Postage,	1 00
May	23.	"	"	Merrihew & Thompson, printing Proceedings,	123 56
July	31.	"	"	Postage,	8 25
Aug.	31.	"	"	Stationery,	1 65
"	31.	"	"	Postage,	5 86
Sept.	30.	"	"	"	74
"	38.	"	"	For filling certificates,	18 50
Oct.	31.	"	"	Freight on certificates,	2 25
"	31.	"	"	Postage,	20
Nov.	30.	"	"	"	50
1862.					
March	8.	"	"	Bill of printing,	6 00
Aug.	23.	"	"	" "	3 80

Aug. 23.	To cash paid Postage, ...	14 42
" 23.	" " Stationery, ...	4 00
" 23.	" " For filling certificates, ...	4 50
" 26.	" " " " " . .	1 00
		$768 14
	Balance on hand, ...	675 37
		$1,443 51

CR.

1860.		
Sept. 12.	By cash received from previous Treasurer, . . .	81 39
1861.	" " to December 31, 1860, . . .	652 96
1862.	" " to December 31, 1861, . . .	395 51
1862.	" " to August 26, 1862, . . .	313 65
		$1,433 51
August 26.	To cash on hand, ...	675 37

HENRY HAVILAND, *Treasurer.*

Mr. Parrish remarked that the amount in the Treasurer's hands would hardly cover the expenses of publishing the volume of Proceedings.

Dr. Squibb moved that the recommendation of the Treasurer, in regard to members in arrears, be referred to the Committee appointed to consider the admission of members in the interim.

The President called up the report of the Committee on the Progress of Pharmacy, laid on the table at the first session.

Some further extracts from the report were read.

Mr. Parrish remarked in reference to the zeal and perseverance of the chairman, and moved that the report be accepted, and referred to the Executive Committee to be published in full, and that the thanks of the Association be presented to Mr. Maisch. Adopted.

The Executive Committee proposed for membership Daniel C. Robbins, of New York, and John C. Savery, of Philadelphia.

A ballot being ordered, the tellers reported them to be duly elected.

Mr. Maisch stated that Prof. Wiggers, of Gottingen, had sent to the Association "Canstatt's Jahresbericht," or Annual Report on the Progress of Pharmacy and collateral sciences in all countries, for the year 1860, in exchange for the volume of this

Association, and remarked that the book contained little information of American Pharmacy, our Pharmaceutical Journals being but little known in Europe, except through the English Journals, which but rarely extract from them.

The Committee to audit the Treasurer's Account reported that they had examined the account and found it correct, whereupon, on motion, the report of that officer was adopted, and directed to be published in the Proceedings.

Mr. Parrish, after apologizing for so frequently speaking, desired to know when probably this session would adjourn, as it would be a suitable time to visit the Academy of Natural Sciences between the sessions. He also referred to an excursion up the Delaware, which it was proposed to carry out to-morrow afternoon, should the convention adjourn in time.

It was then, on motion,

Resolved, That when this session adjourns, it shall be at 12½ o'clock, to meet at 3 and 7½ o'clock, P. M.

The Chairman of the Business Committee brought up the matter of increasing the amount of the annual contribution, and moved that the subject be postponed until next year.

Mr. Taylor stated that many of the members would soon be exempt as life members, and he desired to see that clause of the Constitution altered, to prevent a failure in the funds of the Association.

No action was taken upon either of these propositions.

The Business Committee introduced the following resolution, which was adopted:

Resolved, That the Chairman of the Executive Committee be authorised to employ a phonographic reporter and clerical assistance when necessary to carry out the details of publication for the Association; and that the Treasurer be authorized to pay the bills accruing therefrom.

The session adjourned, as provided by the above resolution, and a number of the members proceeded to visit the Academy of Natural Sciences.

Third Session—Thursday Afternoon.

The meeting was called to order by the President near the time adjourned to, when the Secretary read the minutes of the morning session, which were corrected and adopted.

Dr. Squibb, of the Business Committee, brought forward a resolution to discontinue the Committee on Adulterations.

Mr. Colcord hoped the committee would be continued.

Mr. Wright, of New York, thought the adulteration of medicines was sufficiently extensive to warrant such a Committee.

Mr. Mayer referred to Article 4th, Section 3d, of the Constitution, wherein the duties of the Committee on the Progress of Pharmacy are stated, and asked whether that Committee would not be sufficient to carry out the duties of the Committee on Adulterations.

Mr. Parrish thought there was great danger of carrying this method of treating the subject of adulteration too far. It had become a bugbear in England, and to some extent with us Those who are on the lookout for adulterations in food and medicine seem to seek the most unusual and inaccessible sources of supply, and hence form a false estimate of the real extent of the evil; while those whose interest it is to depreciate and decry our science, would make the public believe that medicines are so adulterated and unreliable, that homœopathy, or some favorite form of quackery, is greatly preferable to legitimate medicine.

He offered the following as an amendment to Dr. Squibb's resolution:

Resolved, That the Committee on Adulterations be discontinued, and a Committee of five be appointed, to be called "The Committee on the Drug Market," whose duty it shall be to report annually the fluctuations in the supply and demand of drugs, the variations in quality, and adulterations and sophistications coming under their observation, or reported to them by others; and that they be authorized to make a report on any adulterations and sophistications of immediate interest, through the pharmaceutical journals, as soon as practicable after their discovery; and that all members are requested to furnish information of the kind required, to the Committee, without unnecessary delay.

Mr. Taylor stated his wish that the amendment would prevail, as it would be far more interesting. The Committee on Adulterations had never accomplished the intention of their organization.

Mr. Milhau stated that since the value of drugs had been so much enhanced, there was more sophistication than ever, and

gave instances showing the need of being on our guard to detect them. He hoped that the Committee would be authorized, and that they be requested to report from time to time in the Journals of Pharmacy.

Dr. Squibb here withdrew his motion, when the Chair stated that the subject before the meeting was the resolution of Mr. Parrish.

Mr. Kiersted suggested that the former title of the Committee should not be changed, as it was quite appropriate.

Mr. Wright moved that the title of the committee, be the "Committee on Adulterations and the Drug-market."

Mr. Wiegand thought the title sufficiently comprehensive to take in all that was necessary; that it was not needful to include articles out of our sphere of action.

The motion of Mr. Wright having failed, the resolution of Mr. Parrish was finally brought up, and after some further discussion, passed unanimously.

Dr. Squibb here stated that the Business Committee (consisting of himself, Mr. Procter and Mr. Carney,) was not a standing committee, but organized at the last meeting on motion of Mr. Meakim to facilitate business at that time, and was directed to hold over till this meeting, to bring up unfinished business, and, if thought advisable, it would be better to appoint a new committee.

A motion was adopted to this effect, and the President appointed the following gentlemen as the Business Committee for the ensuing year, viz: Dr. Edward R. Squibb, of Brooklyn, N. Y., S. M. Colcord, of Boston, and John J. Thomsen, of Baltimore.

The Chairman of the Business Committee now brought forward the matter of the general Index to the first eight volumes of the Proceedings, which Mr. T. S. Wiegand, of Philadelphia, was, by resolution, requested to prepare, and which had required much labor to complete. On motion, the paper which was now presented, was accepted, and the thanks of the Association voted to Mr. Wiegand for this laborious service.

Mr. Taylor proposed that it should be bound separately,

and not incorporated with the volume of Proceedings, as it was no part of that.

Mr. Parrish moved that a committee of two be appointed to examine the Index prepared by Mr. Wiegand, and report at a future sitting, which was agreed to, and Messrs. A. B. Taylor and J. Faris Moore were appointed by the Chair for that duty.

The Business Committee then proposed that the Scientific Queries be now proceeded with, which was carried.

ANSWERS TO QUERIES.

To accommodate Mr. Wiegand, query No. 35, relative to Medicinal Spirits, was first called up, to which he read a reply, which was accepted and referred to the Executive Committee.

To query No. 37, "on Commerce in Quackery," Mr. Wiegand stated that he had not been able to prepare a reply.

Query No. 1. Relative to Morphia and Opium Smoking. Mr. Procter verbally stated that he had commenced experimenting on the subject of the volatility of morphia, bu that in regard to the precise conditions of heat in which opium is placed in the process of opium smoking, he had been met by difficulties that had discouraged him from proceeding further, and that he had therefore abandoned the subject.

Query 2. Relative to Japanese wax—accepted by Thomas A. Lancaster, of Philadelphia, received no reply.

Query 3. On Oil of Benne (Ol. Sesami,) as a substitute for olive oil, in pharmacy, was replied to by James T. Shinn, of Philadelphia.

On motion, this essay was accepted and referred to the Executive Committee for publication.

In relation to the use of Benne Oil, in making plasters, Prof. Maisch remarked, that the property of furnishing a plaster of insufficient hardness would probably render it a useful addition to lard, for the preparation of lead plaster, as plasters made with that material alone were objectionable, on account of their brittleness. A mixture of lard and olive oil forms a good material for soap manufacture. He also spoke of the general adulteration of olive oil in foreign markets, and the indis-

criminate sale of several other oils, alone or mixed, for it, which circumstance will sometimes account for the varying results obtained in our manipulations.

Query 4. On the production of Tartar in the wine region of the Ohio valley, being called up, the President read a paper from Mr. W. J. M. Gordon, of Cincinnati, to whom it was referred, enclosing a letter from Mr. Graham, President of the Wine Growers' Association of the Ohio valley—both of which were, on motion, referred for publication.

Prof. Maisch thought we should encourage the wine-growers and dealers to save the tartar deposits. The dependence of this on foreign countries could be, in time, in great measure relieved, if we take some action. We should address the Association, stating how important it was to them to save the tartar as a source of profit with but little trouble. Prof. Maisch promised to produce the draft of a resolution on the subject, and submit it at a future sitting.

Query 5. Relative to American Aconite root was not replied to by Mr. H. A. Tilden, of New Lebanon, N. Y.

Query 6. On Arsenical Pigments, accepted by B. J. Crew, received no reply.

Query 7. Relative to a permanent solvent for Cantharidin, accepted by Wm. R. Warner, was not answered.

Query 8. On Garancin—directed to B. J. Crew, was not replied to.

Query 9. Relative to Chenopodium, received no written reply. Mr. J. Faris Moore stated that Mr. Balmer, who had accepted this question at the last meeting, had engaged in its investigation, but was not yet prepared to report, and requested its continuance to him, which was so ordered.

Query 10. Relative to the nature of the active principle of Capsicum, was not replied to by Mr. F. L. John, who accepted it at the last meeting.

Query 11. Relative to Conium seeds, referred to Mr. H. F. Fish, received no reply.

Query 12. Relative to the resinoid of Colocynth, accepted by John Faber, of N. Y., received no reply at this session. Subsequently a written paper (with specimens) was received by

the President from Mr. Faber, and is inserted in its proper place, on the authority of a resolution adopted at another time.

Query 13. Relative to the Oil wells of Pennsylvania, etc., accepted by G. W. Weyman, of Pittsburgh, being called up, the President informed the meeting that the acceptor had investigated the subject, and had visited the oil region for that purpose, and was nearly ready to report, when the loss of his assistant, who had recently enlisted in the army, prevented its completion and his appearance at the meeting—therefore requested a continuance of the query. Mr. Procter wished the paper to be published in the Proceedings of this year, if finished in time.

Dr. Squibb and Mr. Mayer objected.

Mr. Parrish advocated the suggestion.

Dr. Squibb urged that previous action of the Association had required all papers for the Proceedings to be completed before presentation. Perhaps this was a special case. The object was to have perfect reports presented at the meetings, so as not to delay the publication of the Proceedings. He therefore moved that the question be continued to Mr. Weyman for another year—which was adopted.

Query 14 was postponed for the present, Mr. Bullock being temporarily absent.

Query 15. The President read a reply to this query on cotton seed oil, from William J. Watson, of Brooklyn, N. Y., accompanied by two specimens of the oil, on motion, referred for publication.

Query 16. Regarding the therapeutic properties of Propylamin, accepted by Dr. Donnelly, was not replied to.

Query 17. Relative to a test for the genuineness of extract of Cannabis Indica, accepted by Mr. Procter, was not replied to, but the acceptor stated that his experiments were yet incomplete, and desired that he might have his results incorporated in the Proceedings, if completed in time.

Mr. W. J. Allinson offered the following resolution, which was passed:

Resolved, That the Executive Committee be authorized to insert in Volume X. of the Proceedings, such essays and answers to queries as may be completed in season, and as may, in their estimation, possess sufficient present importance to render it desirable.

Query 18. Relative to Honey, referred to F. L. John, was not responded to.

Query 19. As to the best manner of dispensing Phosphorus, was replied to by Mr. Faber in a paper received too late for the meeting, but inserted among the essays in answer to queries.

Query 20. On Veratrum Viride, with reference to the constituents to which its sedative action is due, elicited a paper from G. J. Scattergood, which called forth some remark.

Mr. Parrish referred to the discussion, which has occupied a place in all the medical journals for some time past, as to the precise therapeutic action of this drug; some physicians maintaining that it possessed a peculiar and very marked influence on the pulse, associated with very little exhibition of the irritant and otherwise poisonous effects usually attributed to Veratria; while by others, perhaps generally those who have least practical familiarity with it, it is believed to resemble the European Veratrum Album, and to owe its properties entirely to the alkaloid Veratria. Now the kind of investigation just reported to us, is calculated to solve the question. We are, perhaps, too apt to argue from general assertions granted to be true, without much investigation, and hence we constantly attribute effects to the wrong causes. If the sedative principle of Veratrum Viride is a resin quite independent of Veratria, and existing in much larger proportion in the root, we can understand how those physicians who use it the most find it comparatively free from the irritant and poisonous properties known to belong to that alkaloid. This subject should be further investigated by pharmaceutists, who will thus be able to aid physicians in forming an enlightened judgment in regard to the vexed question of the therapeutic properties of this very popular sedative.

Prof. Maisch thought it quite likely that we have in this case an alkaloid accompanied by some resinous matter, which obstinately adheres to it, or else an alkaloid which is uncrystallizable and of a resinous appearance; he also referred, in this connection, to the changes liable to take place in the physical properties of the alkaloids in the course of the manipulations to which they are subjected in the

process of extraction. He had seen Atropia converted into a honey-like extractive matter by very simple manipulations. He considered a liability to error to arise from the possible contamination of the resinous product with the alkaloid, in Mr. Scattergood's experiments.

Prof. Mayer added some remarks on the Veratria of commerce. He had found one specimen of Morson's contain but 91 per cent. of the alkaloid, while much is sold which is still less pure; in manipulating with it, he had met with a peculiar sickening odor.

The answer of Mr. Scattergood was, on motion, referred for publication.

Query 21. On Copaiba, referred to Prof. Carson, elicited no reply.

Query 22. On the Cod-Liver Oil trade, was not answered by Mr. Blatchford, of Rockport, Mass., to whom it was referred.

Query 23. Relative to Sugar-Coating Pills, etc., accepted by Mr. Stearns, of Detroit, elicited no reply.

Query 24. Relative to Convolvulus panduratus, was continued to Mr. Lemberger, of Lebanon, Pa., at his request.

Query 25. Relative to Celandine, was continued to Mr. Bedford.

Query 26. On the tannin-value of our indigenous astringents was not replied to by W. R. Warner, by whom it was accepted.

Query 27. Mr. Mayer was ready to answer this query, but it was postponed till to-morrow morning, for a more favorable light to exhibit the reactions detailed in the essay.

Query 28. On the statistics of the trade in Castor Oil being called up, Mr. Mayer stated that he had been promised full statistics by a person in the business, who had failed to produce them. A large quantity of this oil is made in Jersey City, but those engaged in it are not disposed to give information. The seed is imported free of duty, the best being used for oil, and the refuse, with the cake from the press, for manure.

Query 29. Relative to the acrid principle of Castor Beans, was not replied to by Mr. Warner.

Query 30. What is the true botanical source of Southern

Prickly Ash bark? Prof. Thomas, to whom this question was referred, sent no reply.

Query 31. On the influence of new remedies on pharmaceutical progress, was replied to by Edward Parrish, in a paper, which, on motion, was referred to the Executive Committee for publication.

The Committee on the Manuscript Index of Proceedings, reported as follows:

The Committee to examine and report on the Index to the first eight volumes of Proceedings of the Association, as prepared by Thomas S. Wiegand, report that the Index when printed would perhaps occupy forty-five pages, and they recommend that it be printed and bound in the volume of Proceedings for 1862; that it be paged separately, so that those who prefer, may have it bound separately. Signed, A. B. TAYLOR,

J. F. MOORE.

On motion, the report was accepted, and the Executive Committee instructed to carry out its recommendation.

On motion of Dr. E. R. Squibb, of the Business Committee, it was resolved to appoint a Committee to examine and report on the specimens on exhibition.

The President appointed J. Faris Moore, G. J. Scattergood, and F. F. Mayer, the Committee.

On motion of Edward Parrish, a committee of five was directed to report queries for reference to members, to be answered next year, and the President to act as Chairman and to appoint his colleagues.

On motion, adjourned to meet this evening at 7½ o'clock.

Fourth Session—Thursday Evening.

The members convened according to adjournment.

The President in the Chair.

The Minutes of the last session were read and approved.

The President announced the following as the Committee to prepare queries to be answered next year,—viz.: William Procter, Jr., John M. Maisch, Charles Bullock, J. Faris Moore and P. W. Bedford.

The queries allotted to members at the last meeting for answer, were now called in succession.

No. 32, in relation to Aniline dyes, was not answered by Mr. G. W. Weyman.

No. 33, in relation to Tartaric Acid and the Tartrates, referred to Prof. Maisch, led to some remarks from him in explanation of his failing to produce a written paper in answer to it at this time.

His experiments had so far progressed as to show that the tartaric acid of commerce is nearly chemically pure, though containing traces of sulphuric acid and lime. It is soluble at 79° in about two-thirds its weight of water; a saturated solution containing 59 per cent., and has a sp. gr. 1·33. Tartrate of potassa contains usually from five per cent. to ten per cent. of tartrate of lime. To ascertain the amount of this impurity, treat with caustic ammonia, soda or potassa in the cold, which dissolves the bi-tartrate, but takes up scarcely any tartrate of lime.

The preparation of the report on the Progress of Pharmacy, had prevented his embodying the results of his experiments in a paper for presentation at this time, and on motion this query was continued to him to be answered next year.

Query 34. On the availability of the Tomato as a source of citric acid, was not replied to by Thomas A. Lancaster, of Philadelphia.

Query 36. What course should be pursued by pharmaceutists in relation to adulterated liquors? Henry F. Fish, of Waterbury, Conn., in a letter addressed to the President, made a partial report on the subject, which was, on motion, referred to the Executive Committee, with directions as to its publication. The query was continued to Mr. Fish, for another year.

Query 38. On the leaves of Ricinus, was not answered, the death of Mr. Cushman having prevented.

Query 39. On Anacahuita wood, was not replied to by Mr. Caspari.

Query 40. On the present sources of Senega and Spigelia, was replied to by Mr. Dohme in an explanatory letter addressed to the President.

Query 41. On the production of Elaterium in the United

States, was replied to by Prof. Thomas, and the paper referred for publication.

Query 42. On pharmaceutical apparatus, was answered by Edward Parrish, and, on motion, referred for publication.

Mr. Bullock being now present, an answer to query 14 was called for. He stated verbally that it was almost impossible to find wood creasote of authentic character, it being generally impure carbolic acid. The Messrs. Dupont had informed him that they had ceased to find it profitable to make wood creasote, when the price was below $4.00 per pound; and also that their crude creasote was in their opinion more effective for burns than the present commercial article. Mr. Bullock had had creasote, which was sold as wood creasote, that crystallized in winter.

Dr. Squibb said he had used Merck's creasote for burns, and deemed it, when properly diluted, excellent; this he felt sure was carbolic acid.

A very impure carbolic acid had been sent from London to the Surgeon's Department for use in the army as a disinfectant; and, when mixed with gypsum, as a disinfectant powder. But Crace Calvert says that the acid is not a disinfectant, though antiseptic.

Mr. Maisch formerly thought Merck's creasote was from wood, as there is no coal region near him; but at his prices it could not be made from wood, and coal tar is easily transportable.

Mr. Haviland, in answer to some remarks on the liability of carbolic acid to be discolored by age, stated that he had imported Morson's English manufacture of a wine color.

Mr. Parrish stated that he had observed less of this discoloration in recent specimens, than in the old-fashioned creasote; he had also, he thought, noticed the odor to be more smoky, and less pungent than formerly. He also said that he had recently had applications for *odorless* creasote from dentists, but could not get it, and wished to know if such an article had been seen by any of the members. The dentists constantly use a mixture of creasote, arsenious acid, and morphia for destroying the dental nerves. He asks is pure carbolic acid odorless?

Query 44, addressed to Mr. Shivers, on the preparation of Soaps, received no reply.

Query 45, on Arnica, to Dr. Henry T. Cummings, was not replied to.

Query 46. On the American species of Cantharis, referred to F. Chapman Hill, was replied to in a paper, read by the President, and referred for publication.

Query 47. Dr. Squibb stated that he had no reply to this query relative to a pharmaceutical still, and wished to abandon the subject, yet he proposed in lieu to read a paper on a subject formerly given to him, relative to bleached morphia salts, which was read and referred for publication.

Mr. Wright stated that in a large hospital at New York, unbleached sulphate of quinine was preferred, and Dr. Squibb had examined it and found it to contain more quinia than the white salt.

Dr. Squibb also read a volunteer paper on Scammony, which was accepted and referred for publication.

Query 48. On Arrowroot, was replied to by Evan T. Ellis, in a paper which was read and referred for publication.

A discussion ensued on the relative merits of different commercial varieties of arrowroot, and on the essential difference of quality in this drug. The opinion that St. Vincent Arrowroot is often fully equal to that from Bermuda or other sources, was urged by several members, while the superiority of the water employed in washing the fecula, and the great care habitually bestowed upon its drying and subsequent preservation, were regarded as giving a general and well deserved pre-eminence to the Bermuda variety.

Mr. Milhau called attention to the importance of the precautions for the preservation of this drug. He is in the habit of transferring it from the original packages to glass bottles for preservation, and finds the very last portions left in retailing, to retain the freshness and freedom from mould or other odor, which is so desirable.

Query 49, addressed to Dr. R. Battey, elicited no reply.

Query 50, addressed to A. P. Sharp, was answered by a paper received by post at the following session.

Query 51, addressed to H. A. Tilden, was not responded to.

The list of queries having now been called over in detail, the Association passed to the consideration of other subjects.

Mr. E. Parrish, exhibited and explained a small apparatus

called the Naphthometer, for the detection of benzine or other volatile explosive material in coal oils. An illustrated report of these remarks will be found among the volunteer papers.

The Chairman of the Business Committee brought forward a matter of delinquency of a Boston member, but action was postponed until to-morrow.

It was moved and carried that when we adjourn it be till to-morrow morning at 9 o'clock.

From the list of unfinished business of last year, the Business Committee brought forward the proposal for an Act of Incorporation for the Association. On motion, it was resolved to dismiss the subject from the Minutes.

The Business Committee called up the subject of the appointment of a Committee to report amendments to the law to prevent the importation of spurious drugs and medicines, called the Drug Law. On motion the Committee was discharged from the consideration of the subject.

The proposition for a new certificate of membership, as introduced at the last Annual Meeting, being brought into view by the Business Committee, was after some discussion, on motion, indefinitely postponed.

The subject of offering prizes for valuable and elaborate papers was then brought forward by the Business Committee from the last Annual Meeting, and after having been discussed, it was concluded that, for the present, the object of the Association could be attained by special resolutions to meet the cases that may arise.

The following preamble and resolutions were then offered and unanimously carried:

Whereas, The Report on the Progress of Pharmacy having now necessarily embraced a period of two years, involving an unusual amount of labor; and whereas, the Chairman of that Committee has not only cheerfully given his talents, time and labor to the work, but has systemized and perfected the report to a degree which must reflect great credit upon the Association; therefore

Resolved, That the Treasurer of the Association be directed to hand to the Chairman of the Committee on the Progress of Pharmacy, Mr. John M. Maisch, the sum of fifty dollars, as a prize offered by the Association in honorable recognition of his services in the report of this Com-

mittee; and that the thanks of the Association be and are hereby also given him.

Resolved, That a copy of this preamble and resolutions be given to Mr. Maisch by the Secretary.

On motion the following preamble and resolution were also unanimously adopted:

Whereas, By resolution of the Association at its last annual meeting, it was decided to have a general Index of the Proceedings prepared up to the year 1860, and that a full set of the Proceedings were given to the member who should accomplish the work, as a complimentary prize for the labor involved; and whereas it has subsequently appeared that a full set of the Proceedings was not in possession of the Association; therefore

Resolved, That in appreciation of the time and labor bestowed upon the general Index by Mr. Thomas S. Wiegand, the Treasurer be directed to procure a bound copy of Muspratt's Illustrated Cyclopædia of Chemistry, and present it to Mr. Wiegand, with the thanks of the Association, as a complimentary prize offered for the work accomplished by him.

Resolved, That a copy of this preamble and resolutions be sent to Mr. Wiegand by the Secretary.

On motion of Mr. Parrish, it was resolved, that to-morrow, at 11½ o'clock A. M., be designated for considering the next time and place of meeting; when, on motion, the session adjourned.

Fifth Session—Friday Morning, August 29th.

The meeting was called to order by the President, and on motion of A. B. Taylor, James T. Shinn was appointed Secretary pro tem. during the absence of P. W. Bedford, Secretary.

The Business Committee introduced the case of delinquency referred to yesterday, and exhibited the circular of John L. Hunnewell, of Boston. They offered the following preamble and resolution.*

Whereas, upon evidence furnished in a printed Circular or Calendar herewith appended, John L. Hunnewell, of Boston, now a member of this Association, has violated his agreement to uphold the objects of the Association, as expressed in Article 1, Sect. 5th, of the Constitution, and has violated the spirit of the whole code of ethics; therefore

Resolved, In accordance with Article 2d, Sect. 3d, the said John L. Hunnewell be expelled for this improper conduct.

Resolved, That he be notified of this action of the Association by the Secretary, and that his name be dropped from the Roll.

* See Prefatory Note.

After discussion, on motion, a ballot was ordered upon the adoption of the resolution.

The tellers reported to the Chair, who announced that the vote was unanimous in favor of the resolutions, and that they were accordingly adopted.

The Executive Committee reported the names of

A. W. Newton, of Bristol, Bucks County, Pa.,

J. C. Hughes, of Pottsville, Pa., and

George Y. Shoemaker, of Philadelphia, as candidates for membership.

They were balloted for and duly elected, and the last named being present, signed the Constitution.

Mr. Maisch now presented the following preamble and resolutions, which were passed unanimously:

Whereas, It has come to the knowledge of the American Pharmaceutical Association, that the tartar produced from American wine, has hitherto been thrown away as valueless by the wine-growers; therefore

Resolved, That we regard the production of tartar from American wine of great importance, on account of the extensive uses to which that product is applied in Pharmacy, domestic economy and the arts; that we believe that crude tartar and purified (cream of) tartar will always meet with a ready sale; and that the wine-growers will advance their own interests and assist in developing the resources of American Agriculture by making the experiment of saving the tartar.

Resolved, That the Corresponding Secretary be directed to furnish a copy of this preamble and resolutions to the President of the Wine-growers' Association of the Ohio valley.

The Committee to whom was referred the subject of alterations in the Constitution in reference to membership, and the suspended list, reported the following resolution:

Resolved, That in view of the disturbed state of the country, the publication of the "suspended list" for the present year be omitted, and that the Treasurer be requested to correspond with those members, by circular or otherwise, and ascertain their views of continuing their membership, for action at the next meeting.

Resolved, That it is inexpedient to make any alteration in the Constitution for the present with regard to admitting members during the year.

The question was taken on the resolutions separately, and each of them adopted.

Mr. George C. Close, of Brooklyn, New York, now read a

volunteer paper, on the use of Chestnut leaves in Whooping Cough, and exhibited the dried leaves and a fluid extract prepared from them. The paper was referred to the Executive Committee for publication.

At the request of the President, Mr. Milhau, Vice-President, occupied the Chair for the remainder of the session.

Mr. Mayer now proceeded to read his reply to query No. 27, on Phosphomolybdic acid as a test for alkaloids. Mr. Mayer illustrated his remarks by some experiments. The paper was referred to the Executive Committee for publication.

Mr. Procter now read the answer of Mr. Sharp, of Baltimore, to query No. 50.

Mr. Procter also read a letter from Mr. Dohme, of Baltimore, stating why his paper in answer to query No. 40 was not answered. On motion the latter was referred to the Executive Committee for publication, if deemed suitable.

Mr. Procter stated that he had received a communication from William S. Merrill, of Cincinnati, in regard to the active principles of Hydrastis Canadensis, and though directed to the Editor of the American Journal of Pharmacy, the paper contained a request that it be submitted to the Association. He believed the paper would be proper for the Proceedings by a change of direction. It was accompanied by a number of beautiful specimens of Hydrastia, Berberina, Xanthoxylin, Sulphate of Sanguinarina and other salts, by way of illustration.

After some discussion the paper was not received, on the ground of its not being directed to the Association. Subsequently this action was reconsidered and reversed by the adoption of the following resolution:

Resolved, That the communication received by the President from Mr. Merrill, in regard to Hydrastis, &c., be referred to him (Mr. Procter) to be modified for publication in the Proceedings.

Alfred B. Taylor, Secretary of the Committee of Revision and Publication of the new Pharmacopœia, having at the request of the President prepared a few notes, gave an interesting outline of the Proceedings of that Committee during the two years and a quarter that it has been engaged in the work of re-

vision, mentioning their action in regard to weights and measures, percolation, powders, and many of the preparations that have been introduced. Mr. Taylor observed that his remarks must be considered strictly verbal, and not to be printed in the Proceedings, as he was not authorized to give them to the public, in advance of the publication of the Pharmacopœia.

The Business Committee now brought forward the subject of the next place of meeting, and offered a resolution, but after considerable discussion by Messrs. Colcord, Squibb, Milhau, Bedford, Kiersted, Procter, and others, the resolution was withdrawn, and the following, offered by Mr. Colcord, adopted:

Resolved, That when this Association adjourns it shall adjourn to meet on the second Tuesday of September, 1863, at such place as the President and Executive Committee shall determine, due notice being given in the proper Journals.

The Committee on Specimens on exhibition, presented the following Report:

Among the preparations of a pharmaceutical character, we find most conspicuous the fine collection of elixirs, wines, syrups, and glyceroles; the lozenges, pastilles, and other articles exhibited by Edward Parrish, of Philadelphia, who also exhibits an ingenious apparatus for the ready preparation of suppositories.

H. W. Lesley, of Bristol, exhibits preparations of blackberry root and berries, accompanied by an explanatory paper.

James T. Shinn exhibits specimens illustrating his paper on Oil of Benne.

Messrs. Powers and Weightman, of Philadelphia, are represented by a number of their finer preparations of the alkaloids of cinchona and opium, and metallic chemicals.

Dr. W. H. Pile exhibits a case of Hydrometers, Alcoholmeters, Thermometers, and other graduated instruments, which show the talent employed on, and the excellence of the manufacture.

Edward Parrish exhibits a compact Gas Furnace for pharmaceutical purposes.

A neat nursing bottle is exhibited by Hartell & Letchworth. J. D. Lynde has a patent self-acting valve-stopper for ærated water-bottles. Wright, Smith and Piersall, an ingenious apparatus for testing coal oils as to their safety for use in illuminating.

There is likewise on the table a fine collection of the Zinc ores used by the Lehigh County Zinc Company, of Pennsylvania, deposited by Prof. Robert Bridges.

J. F. MOORE, Chairman.

The subject of a certificate of life membership was brought forward by the Business Committee as a recommendation of the late President, but the proposition was not agreed to.

At the request of the President, Vice-President Milhau announced the following as the Committee on the Drug Market, viz:

Edward R. Squibb, M. D., of Brooklyn, N. Y., *Chairman.*
William Procter, Jr., of Philadelphia, Pa.
Samuel M. Colcord, of Boston, Mass.
Charles Bullock, of Philadelphia, Pa.
Alpheus P. Sharp, of Baltimore.

The following Report of the Committee to prepare queries for investigation next year was now read by the Chairman as follows:

1. Is there a principle in Chenopodium anthelminticum analogous to Santonin, or does the medicinal power of this plant depend wholly upon its volatile oil?

Continued to James Balmer, of Baltimore.

2. Is there a crystalline active principle in Capsicum, or does it owe its pungency to a soft resin?

Accepted by Edward Parrish, of Philadelphia.

3. What progress will have been made during 1862—63 in the collection of tartar in the wine region of the Ohio Valley?

Accepted by W. J. M. Gordon, of Cincinnati.

4. What is the relative activity of the root of Aconitum napellus grown in the United States, and that imported from Europe, based on their yield of Aconitia, and what objections, if any, exist to the economical culture of the plant in the United States? *Accepted by William Procter, Jr., of Philadelphia.*

5. What is the best permanent solvent for Cantharidin suitable for making a Pharmaceutical preparation for blistering?

Accepted by J. Faris Moore, of Baltimore.

6. What are the advantages of the seeds of Conium maculatum, as regards uniformity of medical power, as a basis for the medicinal tincture?

Accepted by George C. Close, of Brooklyn, N. Y.

7. The oil wells of Western Pennsylvania—the quantity and quality of oil they afford at present, their prospective value, and the geological characters of the formation wherein the oil is deposited. *Continued to George W. Weyman, of Pittsburgh.*

8. Does wood creasote exist in the market? to what extent? and what are the objections to the substitution of the former by carbolic acid?

Continued to Charles Bullock, of Philadelphia.

9. Has Propylamin as it exists in Ergot any power to produce uterine contraction; and if so, does commercial Propylamin from herring pickle possess a like power?

Referred to Prof. Robert P. Thomas, of Philadelphia.

10. What is the relative proportion of tannin in the indigenous astringents of the United States, used for medicinal and other purposes.

Accepted by James T. Shinn, of Philadelphia.

11. What is the true botanical source of Southern prickly ash bark?

Continued to Prof. Robert P. Thomas, of Philadelphia.

12. An essay on Tartaric Acid and the medicinal tartrates in their chemical and pharmaceutical relations.

Continued to Prof. John M. Maisch, of Brooklyn, N. Y.

13. What course should be adopted by Pharmaceutists in view of the present state of the liquor market, as regards factitious brandies and wines?

Continued to Henry F. Fish, of Waterbury, Conn.

14. What is the best form and material for a still for use by pharmaceutists, of from two to four gallons capacity, appropriate for being heated by gas or stove heat, and which shall be suitable for the recovery of alcohol in making pharmaceutical preparations.

Accepted by William Procter, Jr., of Philadelphia.

15. What is the most convenient and economical arrangement by which the apothecary can quickly and reliably ascertain

the strength of acid and alkaline liquids for pharmaceutical preparations?

Referred to Dr. Wilson H. Pile, of Philadelphia.

16. What is the best method of keeping garlic during the autumn, winter, and spring in the pharmaceutist's shop, so as to prevent its growth?

Accepted by E. W. Sackrider, of Cleveland, Ohio.

17. What are the actual values of the commercial varieties of Buchu leaves, based on the proportion of volatile oil they will yield. *Accepted by P. W. Bedford, fo New York.*

18. It has been alleged that Ipecacuanha is now adulterated with Euphorbia Ipecacuanha, Gillenia trifoliata and other substances. What are the best means of detecting these adulterations of this important drug?

Accepted by William Wright, Jr., of New York.

19. Why should not Lactucarium be economically produced in the United States for the supply of commerce?

Referred to Henry A. Tilden, New Lebanon, N. Y.

20. An essay on the best practical means of protecting volatile oils from the injurious action of light and air in the apothecary shop, during the course of their being dispensed.

Accepted by Alfred B. Taylor, of Philadelphia.

21. An essay on the actual merits of Sanguinaria as a therapeutic agent based on trials with Sanguinarina and its salts; and its claims to a prominent position in the Materia Medica.

Referred to Prof. Robert P. Thomas, of Philadelphia.

22. An essay on Fluid Extracts—as regards their preparation, permanence, and eligibility as officinal preparations.

Accepted by William Procter, Jr., of Philadelphia.

23. What are the relative merits of White and Black Mustard for use as Sinapisms.

Accepted by J. Faris Moore, of Baltimore.

24. On the pharmaceutical preparations of the Strychnaceæ

(Nux Vomica, Ignatia Amara, &c.,) and on the methods in use for the extraction of their active principles.

Accepted by Prof. Ferd. F. Mayer, of New York.

25. What is the constitution of the several impure Oxides of Iron used in medicine (as Sub-Carbonate, Iron Rust, &c.,) now in market.

Accepted by Ferris Bringhurst, of Wilmington, Del.

26. What are the methods of detecting the adulterations of olive oil? *Accepted by Jonas Winter, of Baltimore.*

27. Do any of the best samples of sulphuric and other mineral acids of American origin contain appreciable amounts of Arsenic?

Accepted by Prof. John M. Maisch, Brooklyn, N. Y.

28. The green sand or marl of New Jersey, according to analysis, contains among other constituents from 10 to 12 per cent. of potassa. Query. Can this potassa be economically extracted sufficiently pure for pharmaceutical and commercial use, so as to compete in price with that derived from wood ashes?

Accepted by George J. Scattergood, of Philadelphia.

29. Is the process of dialysis applicable in Pharmacy? If so, in what instances may it be employed?

Accepted by William Procter, Jr., of Philadelphia.

30. Observations on the "Internal Revenue Law," in its relations to the business of the druggist and apothecary.

Accepted by Edward Parrish, of Philadelphia.

31. What is the value of Chelidonium majus as a source of Sanguinarina, compared with Sanguinaria Canadensis?

Continued to P. W. Bedford, of New York.

The Committee also recommend the adoption by the Association of the following subjects for *prize essays* for general competition; the prizes to be adjudged by a Committee to be appointed by the Association at its meeting in 1864.

1. For the best essay on Cimicifuga racemosa, in its chemical and pharmaceutical relations and medical uses.

2. For the best essay based on a practical and successful experiment on the culture and preparation of Elaterium in the

United States, accompanied by a specimen of the product of not less than 120 grains. Respectfully submitted,

WILLIAM PROCTER, JR.,
JOHN M. MAISCH,
CHARLES BULLOCK,
J. FARIS MOORE,
P. W. BEDFORD.

After some discussion, the Report was unanimously adopted.

Owing to the hurried manner in which these Reports have necessarily to be produced during the sessions, the Chairman of the Business Committee moved that the Committee on questions for investigations be made a standing special Committee to report at the next meeting of the Association—which was adopted.

Edward Parrish here made some interesting remarks on the art of skeletonizing leaves, and its relation to the apothecary's business, and exhibited a beautiful case of bleached specimens called "the Phantom Bouquet," also some very fine and accurate engravings showing the structure of certain leaves.

The same member exhibited an improved *moulded* graduated measure, patented by William Hodgson, Jr., of Philadelphia. By this improvement, the necessity of carefully graduating each measure is avoided, while, it is believed, greater accuracy is attained.

On motion of the Business Committee it was ordered that all periodicals, papers, exchanges, etc., received by the officers of the Executive Committee, be placed at the disposition of the Committee on the Progress of Pharmacy, for use in compiling their Report.

The following resolution was then unanimously adopted:

Resolved, That the thanks of the Association are heartily tendered to the Philadelphia College of Pharmacy and the Pharmaceutists of Philadelphia, for the hospitality and kindness extended to the members of the Association during their visit to this city.

The Secretary then read the Minutes of all the sessions, which after amendment were adopted.

The Association then on motion adjourned, to meet, in accordance with the resolution previously adopted, on the second Tuesday of September, 1863, at such place as the President and the Executive Committee may determine upon.

P. W. BEDFORD, *Secretary*.

REPORTS OF COMMITTEES.

REPORT ON THE PROGRESS OF PHARMACY.

The last report on this subject was presented to the Association at the meeting in New York, in 1860. Although dark clouds had, at that time, commenced gathering on the horizon of our beloved country, there was nobody amongst our members who did not cherish the hope that the threatening storm might pass away without disturbing our national greatness, and shaking the foundations of our social and political life. But the country has been visited by the horrors of civil war, and the clash of arms is now heard, where, but a few months ago, peace and happiness appeared to have taken their eternal abode.

The postponement in 1861 of our yearly gathering renders it necessary, on the part of your Committee, to lay before you a report for two years, instead of embracing the scientific researches and practical observations and suggestions of only one year.

To a considerable extent has the literature of medicine been affected since the commencement of the war, and particularly since it assumed the vast proportions hitherto unknown upon the western hemisphere. Medical journals, generally are now filled with descriptions and the treatment of the most varying kind of wounds and diseases incidental to wars, with subjects which have a particular interest to the surgeon who follows the call of his country to the battle-fields, there to minister the blessings of science to those who have been crippled by the vast resources, appliances and improvements in the means of destruction placed into man's hand by the rapid advancement of applied chemistry and natural philosophy.

The pharmaceutical literature of the United States has not changed to such a degree, because pharmaceutists, as such, are not known or recognized by the medical department of the

Federal army, and a pharmaceutical department does not exist therein. But while our scientific literature has not been changed to any perceptible degree in quality, it has been very sensibly affected in quantity. Under the pressure of the hard times, by which we have been visited, all the journals devoted to pharmacy had to succumb, with the exception of the American Journal of Pharmacy, and the Druggists' Circular, both of which journals, though surviving, suffered very materially from the falling off of subscribers in all parts of the country. We have particularly to regret the suspension of the Journal of the Maryland College of Pharmacy, which, during its existence, gave cheering evidence of a proper spirit in the members of this institution.

At the time of commencing the preparation of this report, Associations. As we are still in hopes of obtaining responses to your Committee regret to have heard from but few of the local the letters of the Corresponding Secretary, his report will be kept open until the meeting of the Association takes place. We know, however, that some of the institutions referred to, particularly those situated near the theatre of war, have suffered greatly, so that we can scarcely expect to see them all represented in the present gathering.

The pharmaceutical journals of foreign countries not being affected to such an extent from the causes which bear heavily upon those of this country, have continued to furnish a vast amount of material for the increase of pharmaceutical knowledge, and it has been a matter of serious consideration on the part of your Committee, in what shape they ought to be offered. We beg leave to offer the principal views which guided us in the adoption of the present form.

The Report on the Progress of Pharmacy is to embrace the improvements in Chemistry, Practical Pharmacy and the collateral branches, reports on any new works bearing on these subjects, published in this country or in Europe, the condition of the drug market, and the quality of drugs and manufactured articles, whether of foreign or domestic production, found in commerce.

Under the last clause, we take it, the quality of drugs, &c., is intended by the Association, so far as it becomes known through

the numerous periodicals; no researches and investigations on this subject, on the part of this Committee, are contemplated, as a special committee on adulterations has been annually appointed. We have, therefore, endeavored to collect the data from the journals as completely as possible.

It has become customary to look upon that part of the report treating on the condition of the drug market as embracing lists of the drugs and medicines imported into the United States at the principal ports. The drug importations at New York having been published until some time in 1861, by the Druggists' Circular, we commenced to prepare a table; but since the paper named has stopped this publication, we have been unable to obtain the information, and cannot, for this reason, make any report on this subject.

Such statistical information, however, possesses considerable interest, particularly if it is carried out in accordance with a well-devised plan, and thus continued from year to year. But the labor to further this object is too great for this Committee, whose members are frequently from places where it is impossible to obtain the information. We would, therefore, respectfully suggest, for the consideration of this meeting, the advisability of the appointment of a committee on the drug market, whose duties would be to report on the importation, and if possible, also on the exportation of drugs, medicines and chemicals. By publishing well-arranged statistical reports on this subject, the Association would indirectly stimulate home manufactures, simply by making known which of our wants must still be satisfied from abroad, and by showing which of our own crude and manufactured articles do not, as yet, find their way into foreign countries.

The condition of the drug market at home is greatly influenced by contingencies abroad, over which we have no control. Fluctuations in the price of drugs, while they may occasionally be due to speculations at home, are more frequently depending on causes operating in another part of the globe, but seriously felt here. The importer and wholesale dealer could give, in this respect, more reliable information than any one further removed from the strictly mercantile branch of the business. Whether it would be advisable to ask annually from some one of our members in

the wholesale business, a report on such fluctuations and their causes, or whether the committee, as suggested before, should also attend to this duty, will be for the Association to direct.

The principal part of the duties of this committee, it appeared to us, is marked out by the first half of Section 3, Article IV. of the Constitution, quoted above, and it remained for us to determine in which manner to arrange the vast material accumulated during the last two years.

Hitherto, it has been collected under several general headings, without any systematic arrangement whatever. The report has, therefore, we believe, not been quite as useful as otherwise would have been the case, notwithstanding, even, the subsequent addition of an alphabetical index. The matter itself might be collected in strictly alphabetical order, and the usefulness of the report considerably enhanced thereby; but we conceived that a scientific arrangement throughout would prove to be by far the most useful, as it would enumerate the researches on the same and kindred subjects in the same place.

For these reasons it has been our endeavor to present this report in such a shape as indicated, but we feel that we have to claim your indulgence, if, on critical examination, we shall be found to have erred occasionally in the manner of arranging. If the systematic way adopted in the following pages shall prove to be useful for reference and adapted to a correct report of the progress of pharmacy and collateral branches of science, then it will be easy to gradually perfect it.

We must say a word or two yet with reference to the record made of the various researches. If the whole report should be intended merely as an index to the pharmaceutical literature between two meetings of our Association, nothing would be requisite but the copying of the titles of the various papers, which would be of no value whatever, except to direct the inquirer to many publications to which he probably has no access. That such a course was not contemplated by the Association, is proved by the reports of the same Committee, made in previous years. We have endeavored to give, in as few words as possible, a concise statement of the principal results without entering into

detail; in cases, however, where a short abstract could not well be made, little more than the title of the paper is mentioned.

To aid those who might wish to consult the original papers, it has been our aim to append to the same article several of the journals in which it was published, but we know that in these quotations we are not quite as complete as we should desire.

Another point about which we desire to make an explanation, is the date of the last journals consulted. As considerable time is occupied by the arranging of the whole report, it is obvious that the journals published but a few days or weeks previous to the meeting could not be consulted. Our meetings have generally been held in September, about two months after the middle of the year, when many journals commence a new volume, so that the first day of July would be a very appropriate time for ending this annual report. We have extended it, however, to the anniversary of our national independence, and have made extracts from no journal published after the fourth day of July.

By the removal of the Chairman of the Committee from Philadelphia to New York, some Journals to which he had access at the former place, were more or less placed out of his reach, while others were opened to him. This may account for some probable imperfections of this report, as will also the fact of his receiving the German Journals very irregularly, in consequence of his removal, explain why these particularly could not be consulted up to the time indicated.

Before proceeding to report, we enumerate the periodicals which have been either partly or entirely consulted; this list will readily explain the abbreviations made use of in the body of the report.

UNITED STATES.

American Journal of Pharmacy, Philadelphia.
Medical and Surgical Reporter, Philadelphia.
Dental Cosmos, Philadelphia.
American Druggists' Circular, New York.
American Medical Times, New York.
American Medical Monthly, New York.
Journal of Materia Medica, New Lebanon.

Journal and Transactions of the Maryland College of Pharmacy, Baltimore.

The Druggist, Cincinnati.

ENGLAND.

Pharmaceutical Journal and Transactions, London.
Chemical News, London.
The Chemist and Druggist, London.
The Lancet, London.

FRANCE.

Répertoire de Pharmacie, Paris.
Journal de Pharmacie et de Chimie, Paris.

GERMANY.

Archiv der Pharmacie, Hannover.
Neues Repertorium für Pharmacie, München.
Wittstein's Vierteljahresschrift, München.
Neues Jahrbuch der Pharmacie, Heidelberg.
Kühtze's Notizen d. prakt. Pharmacie, Crefeld.
Hirzel's Zeitschrift f. Pharmacie, Leipzig.
Annalen der Chemie und Pharmacie, Leipzig.
Canstat's Jahresbericht der Pharmacie, &c., Würzburg.

SWITZERLAND.

Schweizerische Zeitschrift für Pharmacie, Schaffhausen.

SCIENTIFIC INSTITUTIONS, &c.

UNITED STATES.

Harvard University has been presented with the extensive herbarium of the eminent American botanist, Professor Torrey, who will deliver regular courses of lectures on this science.

The museum of comparative Zoology connected with the same institution, was inaugurated on Tuesday, November 13th, 1860. Professor Agassiz is curator and director of this new museum.

The American Medical Association, in consequence of the disturbed state of the country, postponed, like our own Association, their annual meeting in 1861.

In consequence of the change of our National Administration, the various Medical and Pharmaceutical Associations of the principal ports of entry upon the Atlantic coast, urged upon the President of the United States the necessity of making the appointments of Drug Examiners independently from political considerations. Our fellow-member Dr. E. R. Squibb, of Brooklyn, took a conspicuous part in this timely movement, which, however, we regret to say, did not meet with any success.

During the latter part of the summer of 1860, a majority of the Apothecaries of Philadelphia and Boston agreed to close their stores on Sundays, between the hours of 1 and 6 P. M. We believe that this arrangement is still adhered to by many, and have heard of other places having adopted a similar course. Some of the English journals have been advocating the same measure, with what success we are unable to say.

ENGLAND.

The Pharmaceutical Society of Great Britain and the several Provincial Associations have continued their activity and usefulness. A new Association, styled the United Society of Chemists and Druggists, has sprung into existence, whose organ is the Chemist and Druggist, published at London.

The Pharmaceutical Society has succeeded, through the exertions of its members, in exhibiting very complete collections of drugs, and chemical and pharmaceutical preparations at the World's Fair held during the present year in London.

It is proper to remark in this connection, that owing to the failure of the Congress of the United States to furnish, as heretofore, means of transportation, the exhibition of American goods leaves a great deal to desire. Notwithstanding the discouraging state of our internal affairs, the Philadelphia College of Pharmacy has contributed to the exhibition an extensive collection of drugs, derived from plants indigenous and naturalized in the United States, as well as numerous pharmaceutical preparations adopted for the forthcoming Pharmacopœia.

The Cavendish Society has continued the publication of the translation of Gmelin's celebrated Hand-book of Chemistry.

GERMANY.

The two great Pharmaceutical Associations of Germany, the North and the South-German, have continued their labors and the publications of their Journals; the former, the "Archiv der Pharmacie," under the care of its efficient President, Dr. Bley, of Bernburg; the latter, the "Neues Jahrbuch der Pharmacie," edited by Professor Walz, whose sudden and untimely death will be seriously felt. Both branches held a general meeting in 1861, September 2d and 3d, at Coburg. It is worthy of notice that both these Associations are earnestly advocating the adoption of one *Pharmacopœia Germanica* to replace the Pharmacopœias of the different States belonging to the German confederation; also, the liberation of pharmacy from the supervision still exercised by the medical profession according to the various State laws, and in lieu thereof, the representation of the pharmaceutical profession by pharmaceutists. That they are opposed to and condemn quackery in whatever form it may appear, is not more than might have been expected from such an intelligent body.

Provincial and County Associations, being part of the two National Societies, exist all over Germany; the interest in them is kept alive by regular meetings, and by circulating libraries consisting of the principal Journals and scientific publications.

An exceptional position is still occupied by the pharmaceutists of German Austria. No associations of pharmaceutists, except local and provincial ones, had been allowed until the department of the Interior, by an order dated April 16th, 1860, gave permission to establish a "General Austrian Apothecaries' Association," which is to embrace the whole Austrian Empire, and is to have its center in Vienna. Subsequently the government accepted the proposed constitution.

A Congress of Chemists has been held in 1860, in Karlsruhe, Sept. 3d to 5th, on which occasion many celebrities from different countries were present and participated in the discussions on the meaning of the terms "molecule" and "atom," on the abolishment of the term "compound atom," on notation and signs.

SWITZERLAND.

The Apothecaries' Association of our European sister-republic is in a thriving condition, under the efficient Presidency of Dr.

Flückiger, of Bern. Last year, their annual meeting took place at Geneva, and was marked by some interesting and valuable contributions to scientific literature. Great credit is due to this body for their exertions on behalf of a Swiss Pharmacopœia, an undertaking which will doubtless be crowned with success.

PERSONAL NOTICES.

1. *Appointments, &c.*

UNITED STATES.

Both chairs of the New York College of Pharmacy were vacated in 1861, by the retirement of Professor Doremus, who was appointed to the professorship of chemistry in the Bellevue Medical College, and by the removal to Michigan of the Professor of Materia Medica, Dr. G. Thurber.

Ferdinand F. Mayer was appointed to the chair of Chemistry, and John M. Maisch to that of Materia Medica and Pharmacy, to fill these vacancies.

Professor Lewis H. Steiner resigned in June, 1861, his professorship of chemistry in the Maryland College of Pharmacy. The vacancy was filled by the appointment of Mr. Alfred M. Mayer.

FRANCE.

Mr. Delacalle has been appointed for a course on pharmacology at the Faculté de Médècine, Paris (1861.)

Professor Loir has been transferred from the chair of chemistry at Besançon to the same chair at the Faculté des Sciences, Lyons, (Febr. 1861,) and Dr. Reboul followed him at the former place.

Prof. Buignet of the Ecole supérieure de Pharmacie, Paris, has been appointed, (June, 1861,) to the chair of natural philosophy, to fill the place of M. Robiquet, deceased.

The Ecole supérieure de Pharmacie, Strasburg, has received Messrs. Schlagdenhauffen, as Professor of Toxicology and Physics, and Jacquemin as Professor of Chemistry, (July, 1861;) and M. Malapert has been appointed to the new chair of Pharmacy at the Ecole préparatoire de Médècine et de Pharmacie, Poitiers.

GERMANY.

Dr. Henkel has been appointed to the newly erected chair of Pharmacy, at the University of Tübingen, 1861.

At the fiftieth anniversary of the University of Breslau, Dr Duflos, well-known for his pharmaceutical labors, received the diploma of Doctor of Medicine, honoris causa.

2. *Obituary.*

UNITED STATES.

Joseph Laidley, residing at Richmond, Virginia, a member of the American Pharmaceutical Association, was killed by the explosion of a detonating powder, which he was preparing for the Confederate army.

Charles Augustus Smith, of Cincinnati, Ohio, member of this Association, and editor and proprietor of "The Druggist," died in that city on the 19th of March, 1861, of congestion of the brain, in the 52d year of his age.

Dr. Wm. H. Milnor, formerly Secretary of the New York College of Pharmacy, died at Savage's Station, Va., in the capacity of surgeon to the 22d regiment, Massachusetts volunteers.

Charles A. Junghanns, a prominent pharmaceutist of Cincinnati, and member of this Association, is deceased; he was killed in the battle of Shiloh, having volunteered in the service of the United States, against the present rebellion.

For notices of the death of other members, we have to refer to the report of the Executive Committee.

ENGLAND.

Bracy Clark, the author of a veterinary pharmacopœia, died December 16th, 1860, at the age of 90 years.

Thomas Southall, a well-known pharmaceutist, died at Edgbaston, Birmingham, on January 12th, 1861, of inflammation of the lungs.

Dr. J. F. Macfarlan, a prominent member of the British Pharmaceutical Society, died on the 20th of Feburary, 1861, aged 71 years.

Professor John Thomas Queckett, the histologist, died at Pangbourne, on the 20th of August, 1861.

FRANCE.

Prof. Payer, member of the botanical section of the Academie

des Sciences, and Duméril, who was for many years active at the Ecole supérieure de Pharmacie, died in Paris, 1860.

The medical faculty in Paris has lost by death in February, 1861, Dr. Lesseur, chef des travaux chimiques. About the same time, died in Algiers, Dr. Lauries, pharmacist-major of the French army, whose labors for the introduction of the culture of sorgho into Algeria made him widely known in the French empire.

Duportal, Honorary Professor of the Faculté de Médècine at Montpellier, and director of the Ecole de Pharmacie, died there September, 1861.

Isidore Geoffroy Saint-Hilaire, Professor at the museum of Natural History, and at the Faculté des Sciences, well known for his scientific researches, died at Paris, October, 1861.

The eminent and venerable Dr. Biot died at Paris, February 3d, 1862, at the age of 88 years. About the same time, A. Becquerel, but 47 years old, was called from the scene of his usefulness, and while engaged upon important investigations; he was preceded only a few days by his brother-in-law, Dr. P. Menière, principal physician of the deaf and dumb.

Pierre Berthier, the oldest of the French mineralogists, died of paralysis on the 29th of August, 1861, aged 89 years.

GERMANY.

Prof. J. Klotzsch died at Berlin, November 5th, 1860, aged 55 years. He commenced life as an apothecary, became curator of the herbarium of Sir Wm. J. Hooker, and afterwards of the Royal herbarium of Berlin.

Prof. Christian Gmelin, died May 13th, 1860, in his 69th year, shortly after retiring from the professorship of chemistry, at the University of Tübingen.

The same University lost by death on the 9th of July, 1860, their celebrated professor of chemistry, Dr. Julius Schlossberger, aged 41 years. He had just completed the fifth edition of his well-known Lehrbuch der Organischen Chemie.

Dr. Ernst Witting, one of the founders and directors of the North German Apothecaries' Society, died May 8th, 1861.

Dr. Wenderoth, Professor of Botany and Senior of the University of Marburg, died June 5th, 1861, aged 88 years.

Dr. George Liegel, an Austrian pharmaceutist, and widely known as a very successful pomologist, died at Braunau, September 6th, 1861.

Professor Dr. L. Rumpf, occupying the chairs of mineralogy and pharmacy at the University of Würzburg, died there, January 17th, 1862, aged 60 years.

The Nestor of the German physiologists, the celebrated Dr. Tiedemann, formerly Professor at the University of Heidelberg, died in 1861, at the advanced age of 87 years. Another former professor of the same university, the celebrated mineralogist and geologist, Dr. C. C. v. Leonhard, died there in his 83d year.

Dr. C. Bromeis, Professor of Chemistry at the University of Marburg, one of the most talented pupils of Liebig, died there in 1861.

Dr. L. A. Aschoff, one of the directors of the North German Apothecaries' Society, died January 14th, 1861, in his 54th year.

Professor Walz, of Heidelberg, the President of the South German Apothecaries' Association, died suddenly in the prime of his life, and in the midst of his usefulness, March 29th, 1862.

HOLLAND.

Professor de Vriese died at Leyden, January 23d, 1862, but a few months after his return from the scientific exploration of the Dutch possessions in the East Indies.

The University of Leyden also lost on February 3d, 1862, Dr. Charles L. Blume, Professor of Botany, at the age of 66 years. After a residence of ten years in the East Indies, he published his celebrated Flora Javæ et insularum adjacentium.

PUBLICATIONS.

AMERICAN WORKS.

But few books relating to Pharmacology, have been published in our country since the commencement of the Rebellion.

The Pharmacopœia of 1860 is now nearly ready for publication, and we hope will appear without unnecessary delay, as the

unsettlement produced by the prospect of reported changes can only be remedied by the publication of the authoritative formula.

J. B. Lippincott & Co. have in press a small work entitled the Hospital Steward's Manual, by Dr. J. J. Woodward, U. S. A. which will doubtless possess considerable interest to those young men who may become connected with the Pharmaceutical department of the army.

This book contains a full account of the legal requirements of the position of Hospital Steward in the army, with incidental information in regard to the ward-masters, nurses, laundresses, and their several duties; a complete description of the discipline of military hospitals, of the hospital stores, management of the cooking department, and the diet allowed; also, the Dispensary, its arrangement and management, with hints on Pharmacy, which though brief are practical and cannot fail to be useful. The book concludes with hints on minor surgery and dressings, which would be of incalculable advantage to many outside the hospital walls, and especially to Pharmaceutists, so often called to aid or even substitute the Surgeon in emergencies.

The same Publishers will issue, in a few days,

The Phantom Bouquet, a popular treatise on the art of Skeletonizing leaves and seed vessels, and adapting them to embellish the home of taste. By Edward Parrish, a member of our Association. We doubt not this little work will prove useful to many in our profession, as well as to the public at large.

In addition to the foregoing, the following list has been compiled.

Lectures on Materia Medica and Therapeutics. By the late John B. Beck. Prepared by Prof. C. R. Gilman, M. D. of the College of Physicians and Surgeons. Third edition. New York, 1861.

Introductory Course of Natural Philosophy; edited from Ganot's Popular Physics. By W. G. Peck. 8vo. pp. 480. New York, A. J. Barnes and Burr.

Woody Plants of North Carolina. By Rev. M. A. Curtis, D. D. Raleigh, 1860. (A part of the Botanical Section of the Geological and Natural History Survey of North Carolina.) pp. 123, 8vo.

Coal, Petroleum, and other distilled Oils. By Abraham Gessner, M. D., F. G. S. 8vo. pp. 184. Baillière Bros., New York, 1861.

A Manual of Qualitative Analysis. By D. C. Tuttle, Ph. D., University of Virginia, and C. F. Chandler, Ph. D., Union College. Albany, 1860.

An Outline for the Quantitative Analysis of Wine. By Prof. Henry Erni, A. M., M. D., of Nashville. 1860.

Catalogue of the Flowering Plants and Ferns of Ohio. By J. I. Newberry, M. D. Columbus, 1860.

Additions to the Flora of Wisconsin. By T. J. Hale, University of Wisconsin.

Silliman's Principles of Physics, 2d edition. Philadelphia, Peck and Bliss, 1861. Small 8vo. pp. 700.

Tropical Fibres: their Production and Economic Extraction. By E. G. Squier. New York, Scribner & Co., 1861. 8vo. pp. 64, with 16 plates.

ENGLISH BOOKS.

Ure's Dictionary of Arts, Manufactures and Mines. New edition, chiefly rewritten and greatly enlarged. Edited by Robert Hunt, F.R.S., &c. Illustrated with nearly 2000 engravings on wood. London. Longman, Green, Longman & Roberts. 1860.

A System of Instruction in Quantitative Chemical Analysis. By Dr. C. Remigius Fresenius. Third English, from the fourth German edition. By Lloyd Bullock. London. Jno. Churchill. 1860.

The First Lines of Science Simplified, and the Construction of Molecules Attempted. By Jno. G. Macvicar, D. D. Edinburgh. Sutherland & Knox. 1860.

The First Step in Chemistry, a New Method for Teaching the Elements of Sciences. By Robert Galloway. Third edition. London. Jno. Churchill. 1860.

A Manual of Elementary Chemistry, theoretical and practical. By G. Powers, F.R.S. Eighth edition. London. Jno. Churchill. 1861.

A Manual of Chemistry, descriptive and theoretical. By W. Odling, M.B., F.R.S. London. Longman, Green, Longman & Roberts. 1861.

A Manual of Qualitative Analysis. By Prof. R. Galloway, F.R.S. London. John Churchill. 1861.

Elementary Treatise on Physics, experimental and applied. By Prof. A. Ganot. Translated and edited from the ninth edition. By E. Atkinson, Ph. D. London. H. Ballière. 1861.

A Manual of Botany, including the structure, function, classification, properties, and uses of plants. By Robert Bentley, F.L.S. &c. Part I. Structural and Systematic Botany. London. Jno. Churchill. 1861.

The Composition of the Urine in Health and Disease, and under the action of remedies. By E. A. Parkes, M. D. London. Jno. Churchill. 1860.

Adulterations Detected, or plain instructions for the discovery of frauds in food and medicine. By Arthur Hill Hassell, M. D. Second edition. London. Longman, Green, Longman & Roberts. 1861.

A Manual on Structural Botany, for the use of classes, schools, and private students. By M. C. Cook, with upwards of two hundred illustrations. By Ruffle. London. R. Hardwicke. 1862.

The Art of Perfumery, and the methods of obtaining the odors of plants. By G. W. Septimus Piesse. Third edition. London. Longman, Green, Longman & Roberts. 1862.

FRENCH BOOKS.

Dictionnaire général des eaux minérales et d'hydrologie médicale, par Durand-Fardel, Eugène Le Bret, J. Lefort avec la colaboration de M. Jules François. Paris. 1860. J. B. Ballière.

Chimie organique fondée sur la synthèse. Par Marcellin Berthelot. Paris. 1860.

Formulaire vétérinaire, &c., suivi d' un mémorial thérapeutique par M. A. Bouchardat, professeur, &c. Seconde édition. Considerablement augmentée. Paris. 1861. Germer Ballière.

Agenda Médical pour 1862, à l' usage des médecins, des pharmaciens et vétérinaires. Paris. P. Asselin.

Traité pratique de médecine légale rédigé d'aprés des observations personelles, par J. L. Casper, professeur à l'université de Berlin. Traduit de l'allemand sous les yeux de l'auteur, par M. Gustave Germer Ballière. 2 vols. Paris. Germer Ballière.

Tableaux d'analyse chimique conduisant à la détermination de la base et de l'acide d'un sel inorganique isolé avec les couleurs caractéristiques des précipités, dressés par M. Gréhant, préparateur de chimie au lycée Napoléon. 2 planches courtonnées avec introduction. Paris. 1862. Germer Ballière.

Annuaire de thérapeutique, de matière médicale, de pharmacie et de toxicologie, pour 1862. Par A. Bouchardat. 22ème année. Paris. Germer Ballière.

Nouveau formulaire magistral, &c., suivi d'un précis sur les eaux minerales naturelles et artificielles, d'un mémorial thérapeutique, de notions sur l'emploi de contre-poisons et sur les secours à donner aux empoisonnés et aux asphyxiés. Par A. Bouchardat. Paris. 1862. Germer Ballière. 11ème édition.

Leçons de chimie élémentaire appliquée aux arts industriels. Par M. J. Girardin, doyen et professeur de chimie de la faculté des sciences de Lille. Paris. 1861. Victor Masson et fils. 4ème édition.

De l'urine et des dépôts urinaires, &c., par M. Golding Bird. Traduit et annoté par Dr. C. O'Rorke. Paris. 1861. Victor Masson et fils.

Flore des environs de Paris. Par MM. Cosson et E. Germain de Saint Pierre. Paris. 1861. Victor Masson et fils. 2. édit.

Traité de chimie générale, analytique, industrielle et agricole. Par J. Pelouze et E. Fremy. 3ème édition. Paris. Victor Masson et Fils. 6 vol.

L'année pharmaceutique ou revue des travaux les plus importants en pharmacie, chimie, histoire naturelle médicale qui ont paru en 1860. Par M. L. V. Parisel, pharmacien. Paris. Victor Masson et fils.

Guide de botaniste ou conseils pratiques sur les excursions botaniques, &c. Par E. Germain de Saint-Pierre. Paris. Victor Masson et fils.

Dictionnaire des mots techniques français et latins employés dans les ouvrages de botanique. Par E. G. de Saint-Pierre. Paris. Victor Masson et fils.

Sur le chauffage au gaz dans les laboratoires de chimie. Par G. Chancel et E. Diacon. Paris. 1861. Victor Masson et fils.

GERMAN BOOKS.

Die œsterreichische Militair-Pharmacopœ, 4. Ausg., mit allen

seither getroffenen Aenderungen. Von Prof. Dr. Bernatzik. Wien. Braumüller.

Die praktischen Arbeiten im chemischen Laboratorium. Mit 90 Abbildungen. Von Dr. C. Bischoff. Berlin. Springer. 1862.

Flora universalis in colorirten Abbildungen. Neue Serie. Von Dr. Dav. Dietrich. Jena. Sucknow. In Heften.

Therapeutischer Commentar zur 2. Auflage der Pharmakopœ für das Kurf. Hessen. Von Prof. C. P. Falck. Marburg. Elwert. 1862.

Anleitung zur quantitativen chemischen Analyse. Von Prof. Dr. C. R. Fresenius. 5. Auflage. Mit Holzschnitten. Braunschweig. Vieweg & Sohn. 1862.

Die seit 1830 in die Therapie eingeführten Arzneistoffe und deren Bereitungsweisen. Auf Grundlage der Preisschrift des Dr. V. Guibert. Von Dr. Rich. Hagen. Für Aerzte und Apotheker. Leipzig. Kollmann. In Lieferungen.

Handbuch der Giftlehre für Chemiker, Aerzte, Apotheker und Gerichtspersonen. Nach der 2. Auflage des Holländischen von Prof. Dr. A. W. van Hasselt, frei bearbeitet und mit Zusätzen versehen von Prof. Dr. C. B. Henkel. 2 Theile. Braunschweig. Vieweg & Sohn. 1861.

Hofmann's Lexicon der chemisch-technischen und pharmaceutischen Präparate. Mit Vorrede und Sachregister von Dr. E. Winkler. Dresden. Klemm.

Leitfaden für die agricultur-chemische Analyse mit specieller Anleitung zur Untersuchung landwirthschaftlicher Stoffe. Von Prof. Dr. F. Krocher. Oppeln.

Die nützlichen und schädlichen Schwämme. Von Prof. H. O. Lenz. Mit 59 illum. Abbildungen. Gotha. Thienemann. 1862.

Lehrbuch der chemisch-analytischen Titrir-Methode. Von Dr. Fr. Mohr. 2. umgearbeitete Aufl. Braunschweig. Vieweg & Sohn. 1862.

Die Chemie der Ackerkrume. Von Prof. G. T. Mulder. Aus dem Holländischen unter Mitwirkung des Verfassers von Dr. C. Grimm. Leipzig. Weber. In Lieferungen.

Die Bitterstoffe und kratzend schmeckenden Substanzen des Pflanzenreichs. Eine chemische Monographie von August Kromayer. Erlangen. F. Enke. 1862.

Lehrbuch der technischen Chemie. Von Prof. B. Quadrat. Wien. Gerold's Sohn. 1862.

Tafeln zum Unterricht in der Krystallographie. Von Prof. Dr. F. Pfaff. Erlangen. Bläsing.

Das Mikroskop und seine Anwendung insbesondere für Pflanzen-Anatomie. Von Prof. D. H. Schacht. Berlin. G. W. F. Müller. 1862.

Die Flora des Kanton's Luzern, des Rigi und des Pilatus. Von J. R. V. Steiger. Luzern. Schiffman. 1860.

Prodromus floræ hispanicæ, &c. Auct. Dr. M. Willkomm and Dr. J. Lange. Stuttgart. Schweizerbart. In Heften.

PHARMACY.

GENERAL PRACTICAL OBSERVATIONS.

The dispensing of potent medicines and the precautions to be adopted by pharmacists, have been extensively discussed by the English journals. Among the suggestions, we mention the one of Julius Schweitzer, in Ph. Jour. and Tr. ii. 400, who advocates the use of bottles with a contracted mouth, allowing the fluid or powder to pass only in small quantity.

Blue bottles. Carl Oelschig reminds of the destructive influence of blue light upon organic substances. Arch. d. Ph. cxviii. 160. A. D. Circ. vi. 25.

Red glass bottles are recommended by Dumey, for keeping preparations which are affected by light. Rép. de Ph., 1861. June. A. Jour. Ph. ix. 411.

Double cased tin vessels are used by John B. Enz, for preserving perfectly dried vegetables from the deteriorating influence of light and air; by making use of Appert's method, he has preserved flowers of tender color. Wittst. V. Schr. ix. 349. A. Jour. Ph. viii. 559.

Filtered air will keep cold infusion of senna, etc., for years, without any tendency to spoil. Wittst. V. Schr. xi. A. Jour. Ph. x. 336. (Dusch and Schröder.) See also "infusions."

Intense cold is produced by Lovi and Drion, on blowing dry air into ether, (—34° F.,) liquid sulphurous acid (—50°), or liquid ammonia. (—87° F.) A. D. Circ. v. 59. A. Jour. Ph. ix. 223.

On the boiling point of liquids under various circumstances, see a paper by L. Dufour, in Comptes rendus. Ch. N. iv. 20 A. D. Circ.

Explosion of glass. See some remarks by Mr. Donovan, in Med. N. A. D. Circ. v. 38.

The removal of deadened skin, nitric acid stains, etc., is effected by sulphide of ammonium, with potassa, scraping and subsequent washing with acidulated water. Schweiz. Z. v. 132. A. Jour. Ph. ix. 111.

In notes on narcotics, E. Parrish gives some interesting observations, derived from the prescription records. M. & S. Rep. vii. 105.

Dental pharmacy. E. Parrish urges the necessity of a better acquaintance with materia medica on the part of dentists, and discusses the proper basis of tooth powders and washes. Dental Cosmos, ii. 659.

Stoppers will not become cemented to the neck of the bottles by alkalies, if they have been covered by paraffin. Klinkowstroem, in Ph. Centralhalle. A. D. Circ. v. 83.

WEIGHTS AND MEASURES.

The avoirdupois weight with the ounce subdivided like the present apothecaries' ounce, had been adopted for the forthcoming British Pharmacopœia. According to information lately received, this decision is as yet not final. See remarks on this subject by Prof. Procter, in Am. Jour. Ph. ix. 89; also, a paper by W. J. Wolfley, in A. D. Circ. iv. 317.

It is understood that for our expected Pharmacopœia, the Troy weight has been retained. The subject of a change of weights to the decimal system, is therefore postponed.

The imperial pint, it is observed by A. B. Taylor, is within an inconsiderable fraction exactly one-fifth larger than the wine pint. A. Jour. Ph. x. 326.

POWDERS, ETC.

Camphor is recommended to be powdered, by the Journ. de Chim. Méd., with the addition of water. A. Jour. Ph. ix. 381. H. F. Fish's method, it will be remembered, consists in precipitating the tincture by water. See Proceed. 1860.

Flaxseed. Some practical information is detailed in a paper by Charles V. Hagner, in A. Jour. Ph. x. 211, showing the manner of grinding these seeds without giving the meal a greasy appearance.

Effervescing Carbonate of Iron, by Dr. Skinner. Tartaric Acid ℥iii.; Carbonate of Soda ℥v.; Sulphate of Iron ʒx.; Sugar ʒxiv.; Citric Acid ʒii.; Ch. & Dr. 1861. Nov. A. Jour. Ph. x. 157. See also, the paper on effervescing powders, in Proceed. A. Ph. Ass. 1856.

Granular citrate of magnesia, manufactured in Paris, is composed, according to Landerer, of 360 bicarbonate of soda, 300 tartaric acid, 20 citric acid, 72 sulphate of magnesia, and 0·5 oil of lemon. The two first ingredients are heated together just to fusion, then powdered and mixed with the others. Wittst. V. Schr. x. 218. A. Jour. Ph. ix. 409.

Granulation of medicines is advocated by Dr. Skinner, in Ph. Jour. & Tr. iii. 578, (A. Jour. Ph. x. 224,) but opposed by A. P. Haselden, ibid. 603. See also, Dr. Thomas Skinner's reply in same journal iv. 35.

Sulphurous powder, for artificial sulphur water, is made by Marc. Pouillet of equal parts sulphide of calcium, bicarbonate and sulphate of soda, sulphate of potassa, tartaric acid and gum arabic. 0·5 grm. are dissolved in 1 litre water. Rép. de Ph. 1861, Feb. A. Jour. Ph. ix. 214.

Pulvis stypticus is reported by Dr. Spengler to have become officinal in Nassau: Pulv. resinæ, P. alumin. usti, P. gummi arabici *aa* p. æqual. Archiv d. Ph. ciii. 99.

DISTILLED WATERS.

Distilled medicated waters are kept by John B. Enz, in a concentrated state, with the addition of very little alcohol. Wittst. V. Schr. ix. A. Jour. Ph. viii. 559.

On the preparation of a strong bitter almond water, see Mich. Pettenkofer's directions in N. Rep. x 338. A. Jour. Ph. x. 333. Does the boiling water not prevent the reaction of emulsin upon amygdalin?

Aqua amygdalæ amaræ is distinguished by Dr. Schmidt, of Wunsiedel, from Aq. laurocerasi, by producing with ammonia

instantly a dense milkiness, the latter after some time only a turbidity. N. Jahr. d. Ph. xvii. 148.

Aqua laurocerasi. Harry Napier Draper, finding the distilled water too variable in strength, recommends an artificial product (Ph. Jour. and Tr. ii. 382,) containing 1-25 per cent. HCy J. M. Rimmington (ibid. 410,) improves it by using ol. amygd. am., instead of ol. lauro-ceras. Dr. W. H. Pile, publishes his formula (A. Jour. Ph. x. 132,) which has been used for several years in Philadelphia, yielding a preparation containing nearly 1-10th per cent. HCy.

Aqua aurantii flor. dist., is, according to Gobley, distinguished from the fictitious water prepared from the oil, by producing a rose color, while the last is not affected, on the addition of some acid composed of 1 sulphuric, 2 nitric acid, and 3 water. Rép. de Ph. xvii. 16.

SOLUTIONS.

(1.) *In water and syrup.*

Artificial Mineral Waters.—A lengthy report on this subject and the products derived therefrom, has been made to the Société de Pharmacie, Paris, by MM. Chatin, Poggiale and Lefort. It is published in Journ. de Chim. et de Ph. xli. 370.

Aërated Chalybeate Water is prepared by Dr. v. Hauer, by dissolving iron reduced by hydrogen in carbonic acid water, one pint of which saturated at ordinary pressure, takes up enough iron to form 7 grains FeO,CO_2. Erdmann's Journ. lxxxi. Ch. N. iv. 70. A. D. Circ. v. 82. This process has been patented in England in 1860.

Liquor Ferri Persulphatis. Charles L. Eberle relates some observations with Monsell's salt, and publishes his formula for preparing the solution in A. D. Circ iv. 285.

Liquor Magnesiæ Citratis. Wm. J. Watson, of Brooklyn, prepares this cathartic by weighing out the ingredients for each bottle, and avoiding filtration. A. J. Ph. ix. 121. Of course, the carbonate of magnesia and the other substances must be perfectly free from all foreign matter.

Liquor Potassæ. Professor Redwood prepares this solution without the aid of heat, and filters it through muslin. His elab-

orate paper is published in Ph. Jour. and Tr., 1861, March, an abstract in A. J. Ph. ix. 241.

Liquor Potassæ Acetatis is kept by Jas. T. Shinn, for dispensing purposes; it is intended to contain per fluidounce ℥ss. crystallized KO,$\overline{A}$c, and is made by saturating acetic acid with bicarbonate of potassa. A. J. Ph., x. 306.

Solutio Strychniæ Phosphatis. F. F. Mayer in commenting on this salt, republished Dr. F. E. Wilkinson's formula for the solution, prepared extemporaneously by dissolving 2 gr. strychnia in one ounce of phosphoric acid. Pharm. Lond. A. D. Circ. v. 37.

Solutio Atropiæ Glycerinea is made by Ch. B. C. Tichborne, to contain ½, and the weaker ¼ per cent. of the alkaloid, previously dissolved in alcohol, which is afterwards evaporated. The solution is intended for dilatation of the pupil. Ch. N. 1860, Oct. A. J. Ph., ix. 64. A. D. Circ. iv. 338.

Syrup of Iodohydrargyrate of Iron is prepared by Chamoun, simply by dissolving one part of red iodide of mercury in 3000 p. liq. ferri iodidi. Rép. de Ph. A. D. Circ. iv. 243.

2. *In Alcohol.*

An interesting essay on the *solubility of resins, sugar and gums in alcohol*, was presented by Dr. Flückiger, to the Swiss Apoth. Assoc., at their meeting at Geneva, 1861.

Tinctura Ferri Protochloridi is prepared by E. Amsler, to contain 1 oz. of the salt to 7 oz. alcohol, of 60 per cent. and preserved by ½ oz. sugar. Schweiz. Z. f. Ph., v. 123. A. J. Ph., ix. 111.

Tinctura Ferri Chloridi of U. S. Pharmacopœia is prepared by J. L. Lemberger, according to the officinal process from subcarbonate of iron, prepared by himself. A. J. Ph. x. 192. Dr. W. H. Pile suggests another method, based upon the amount of fine iron wire dissolved by the acid. A convenient way is to keep an aqueous liquor of definite strength on hand. A. J. Ph. x. 17.

Tinctura iodinii. Dropet concludes from his experiments that iodine forms hydriodic acid by decomposing the water contained in the alcohol; hence the necessity of using strong alcohol for it. Rép. de Ph. xviii. 214. A. J. Ph. x. 368.

Newly distilled spirits contain, according to Dr. A. A. Hayes,

copper, lead or tin from the condensers; the matured spirit has generally deposited every particle of it. Bost. M. and Surg. Jour. lxiii. A. D. Circ. v. 269. A. J. Ph. ix. 504.

It will be remembered that Flach proved the presence of tin in recently distilled waters. See A. J. Ph. vii. 204.

Spiritus ætheris nitrici. In an elaborate paper on this subject, in which he reviews the various old and new processes, Feldhaus, of Horstmar, advocates its preparation by mixing the various ingredients contained in it; he proposes the following proportions: Nitrous ether 8 parts, acetic ether 2 parts, alcohol 90 parts. Arch. d. Ph. cii. 278—307.

Spiritus ophthalmicus Himly. Bals. Peruv. gr. xii. Ol. lavand., major., caryoph., serpylli, rutæ, succini *aa* gr. viii. Alcoh. fort. ℥viii. M. Archiv d. Ph. ciii, 99.

3. *In Ether and Chloroform.*

Vesicating Collodion. C. R. C. Tichborne exhausts the flies by ether and some acetic acid; the latter modifies the contractibility of the artificial cuticle. Ph. J. and Tr. 1862, April. The process of the new Pharmacopœia is published by Prof. Procter, in A. J. Ph. x. 322.

Sinapic Collodion. The same author recommends the following formula: Olei sinap. volat. f.ʒi. Collod. f.ʒvi. Acid. acet. glac. gtt. xx. Ibid.

Collodion. Wm. S. Thompson of Baltimore, obtains a soluble gun cotton by maceration in equal measures of sulphuric and nitric acid at 110° F.; he proposes a large proportion of alcohol to be added to the ether. J. and Tr. Md. Coll. Ph. ii. 70.

Solution of Gutta Percha in chloroform, as used by W. Hodgson, Jr., is likely to be adopted for the Pharmacopœia. See A. J. Ph. ix. 201. A. D. Circ. v. 129.

4. *In Oils.*

Oleum Morrhuæ ferratum. See a process in A. J. Ph. ix. 317, from Archiv d. Ph. civ. 207. See also Proceed. A. Ph. Ass. 1860, page 101.

INFUSIONS AND DECOCTIONS.

Infusum Rhei, by many Pharmacopœias called Tinctura rhei aquosa, is prepared by cold maceration with water containing car-

bonate of potassa. Enz preserves it by Appert's method. Wittst. V. Schr. ix. A. J. Ph. viii. 556.

Wollweber gives a process for a concentrated preparation, which may be kept for months without change. N. Jahrb. xvii. 207. Filtered air would probably answer as was observed by Dusch and Schröder, for *Infusum Sennae.* See A. J. Ph. x. 386.

Decoctum Althææ. Its yellow color is stated by G. Selle to be due to the presence of ammonia, generated by the decomposition probably of asparagin. Arch. d. Ph. civ. 160. A. J. Ph. ix. 317.

TINCTURES.

Substitute for Tinctures. Regarding the alcohol as objectionable in most instances, Sir James Murray proposes to exhaust the drugs by highly carbonated water, containing magnesia and camphor, the latter to act as an antiseptic and stimulant to the stomach, Dubl. Med. Press. A. D. Circ. v. 233.

This is certainly a very peculiar menstruum ; but is it a universal solvent ? and is the camphor not objectionable in most instances ?

Deposits of Tinctures. Ch. Meniere has made some microscopic examinations of such deposits. (See Rép. de Ph. xvii. 232. A. D. Circ. v. 106.) He says, that acetic acid is very commonly met with in this class of preparations.

Change of Tinctures. Jno. B. Enz in remarking on the deposits occurring in tinctures, and the loss of color and taste of some, suggests the necessity of making experiments with bottles of different colors. Wittst. V. Schr. ix. A. J. Ph. viii. 556.

Cultivated Wild Plants for Tinctures. Luneau observed that perfectly developed leaves of digitalis yield 7 7-16ths parts more extract than the young leaves; German arnica flowers 13 3-16ths, wild valerian root twice, Bohemian angelica root 15 parts more extract, than is obtainable from the cultivated plants. The *Alcoolatures*, prepared by the new Belgian Pharmacopœia with equal parts of fresh herbs and alcohol of 38° B. is regarded as superior by him to the true tinctures. Bull. de l' Acad. de Méd. Belg. Rép. de Ph. xvii. 210.

Test for Tinctures and Wines. L. Leroy, of New York, com-

pares such preparations by the color of a drop dried upon blotting paper. See A. J. Ph. ix. 93.

Tinctura Aconiti radicis, U. S. Ph. and Fleming's. See remarks on these potent preparations, and on what the author calls *normal solution of aconite*, by Prof. Procter, in A. J. Ph. ix. 103.

Tinctura Arnicæ. Professor Procter uses as menstruum alcohol of 64 per ct. (3 volumes of alcohol of ·835, 1 vol. water;) strength, ℥iii. of the flowers to the pint, A. J. Ph. ix. 11. Wm. S. Thompson, of Baltimore, employs the same menstruum, (2 measures 95 per ct. alcohol, 1 water,) but only ℥ij. of the flowers to the pint. J. Md. Coll. Ph. ii. 69. T. J. Smith treats flowers first with boiling 95 per ct. alcohol, and displaces with alcohol of 85 per ct. J. Md. Coll. Ph. A. D. Circ. iv. 388.

Tinctura Colchici was found by Pillas, of Meaux, to lose its virtues in a few months. Rép. de Ph. xvii. 214.

Tinctura Cinchonæ. J. M. Maisch has examined the deposit occurring in the officinal tinctures of cinchona; as it contains a portion of the alkaloids, the employment of a stronger alcohol is suggested. A. J. Ph. ix. 193.

Tinctura Cinchonæ Ferrata. From his experiments J. M. Maisch reasons that this preparation can have no advantage over the solution of an organic iron salt with the cinchonæ alkaloids. A. J. Ph. ix. 304.

A Tinctura Gentianæ comp. is prepared by J. T. Shinn with diluted alcohol; 4 fluid ounces of it added to 12 fluid ounces of water will represent the officinal infusum gentianæ compositum. A. J. Ph. x. 307.

Tinct. Ignatiæ amaræ compos. is prescribed now in Philadelphia; it is the *gouttes amères* of Dorvault's l'Officine, page 337. A. J. Ph. x. 208.

Tinct. Moschi. Deschamp uses 1 part of musk to 5 p. alcohol of 56 per ct., this menstruum being better adapted for the purpose than stronger alcohol. Rép. de Ph. xviii. 219.

Berzelius already has advocated the employment of weak alcohol for exhausting the odorous and antispasmodic principles.

Tinct. Nucis Vomicæ. Wm. S. Thompson macerates the broken seeds (not beans as stated in the original) in 1 1-7th p.

water before adding the alcohol, and considers the preparation satisfactory. J. Med. Coll. Ph. ii. 69.

Tinct. Valerianæ acetata. Dr. D. Webster Bland recommends a tincture prepared from valer. ℥iv.; acid. acet. ℥jss.; alcoh. dil. Ojss. Med. & S. Rep. A. D. Circ. v. 189.

Eau d'Orval, originated in France, and beginning to be used in Central Europe, is an aromatic tincture prepared according to F. Tedesco, from anis., fœnic. *aa* 30, junip. baccæ, aurant., canellæ albæ *aa* 45, santali rubr. 90, rad. angelicæ, imperatoriæ, contraj., galang. *aa* 60, myrist., caryoph. *aa* 15, alcoh. (25 per ct.) 3000. Kühtze's Notizen. xxv. 41.

The following tinctures have been made official in Nassau, as reported by Dr. Spengler:

Tinct. Ambræ: ambræ gris. ʒj.; spirit. ætherei ℥vj.; macerate for 8 days.

Tinct. Fabarum St. Ignatii: Fab. St. Ignatii pulv. ℥j.; alcohol, ℥iv.; macerate 8 days.

Tinct. Secalis cornuti: ergotæ cont. ℥j.; alcohol, ℥vj.; macerate 8 days. Archiv d. Ph. ciii. 99.

WINES.

Vin. Colchici Seminis. W. Wollweber observes that the seeds softened by steam are readily crushed under the pestle, but liable to turn rancid. N. Jahrb. d. Ph. xvii. 209.

Vin. Ferri amarum. Prof. Procter comments on the various formulas proposed for this preparation. A. J. Ph. ix. 18.

Vin. Ferri et Quiniæ citratis. Sam. Campbell adds a solution of citrate of iron to a freshly prepared solution of citrate of quinia, and dilutes with sherry wine. A. J. Ph. ix. 109.

Vin. Opii, Sydenham's laudanum. See the suggestive experiments of L. Ladé, of Geneva, with various menstrua, in Schweiz. Z. f. Ph. vi. 157. A. J. Ph. x. 38.

Vin. Aromaticum. Now officinal in Nassau, according to Dr. Spengler: specier. aromat. (consisting of equal parts of herb. salviæ, thymi, serpylli, hyssopi, menthæ aquosæ, origani, absynthii,) ℥iv.; vini rubri, ℥xxxii.; digest for 8 days, filter and add aq. vulnerariæ vinosæ, ℥ij. Archiv d. Ph. ciii. 99.

Vin Chloroformique of Bouchut: Chloroform 2–4; alcohol,

16–32; red or white wine, 500 parts by weight. Rép. de Ph. xviii. 56.

Antilymphatic Wine of Boutigny: juice of Nasturtium, alcohol of 36° B., Calisaya bark, each 25 grm.; phosphate of lime obtained from 1 grm. CaCl., orange peel 2 grms., white wine 1 litre, to be macerated for a week. A. D. Circ. iv. 283.

Natural Iodine Wine, so called, of Dr. Boinet, is prepared by fermenting grapes with intermediate layers of seaweed. Bull. de Thér. Ch. N. iv. 302.

Obviously this is merely a vinous tincture of seaweeds, and the amount of iodides, bromides and chlorides must be very variable. Why not dissolve the alkaline salts of these halogenes in wine? This course would appear to be more *natural*.

ELIXIRS.

Ferrated Elixir of Cinchona is prepared by Jas. T. Shinn, by exhausting cinchona with a very aqueous menstruum, adding alcoholic liquids afterwards to preserve it; the iron is employed as ammonio-citro-pyrophosphate. A. J. Ph. x. 204.

Does the menstruum exhaust the whole of the alkaloids?

The Buffalo Med. and S. J. gives the following formula for a similar preparation: Solut. ferri protoxidi (?) f.ʒvi. Ext. cinchon. calis. ʒv. Alcohol (80 per ct.) f.ʒxiv. Syr. simpl. f.ʒxx. Tinct. cort. aurant. Tinct. cort. limon. Tinct. cinnam. *aa* f.ʒi. Tinct. caryoph. (?) gtt. vi. dissolve and mix. M. & S. Rep. viii. 280.

Elixir of Citro-lactate of Iron. Robineaud dissolves 2 grm. lactate and 2 grm. citrate of iron in 70 grm. water, adds 50 gr. alcohol of 80 per ct. and 90 grm. simple syrup, flavoring with 2 grm. tinct. lemonpeel, 2 grm. tinct. canella and 6 drops tinct. cloves; the whole to be colored with caromel. Journ. Ph. de Bord. A. D. Circ. iv. 279.

Elixir of Valerianate of Ammonia. T. H. K. Enos uses: valerianic acid (what strength?) f.ʒi. carbonate of ammonia q. s. alcohol, syrup, of each, f.℥i. extract of orangepeel ʒii. orange flower water f.℥ss. water sufficient to make f.℥iv. J. Md. Coll. Ph. 1861, March. A. J. Ph. ix. 345.

Elixir Chloroformique of Bouchut: chloroform 8, alcohol 64, syrup 225 grm. Rép. de Ph. xviii. 57.

VINEGARS.

Acetum Ipecacuanhæ is recommended by Gge. Johnson as a more advantageous preparation than the wine. Ph. J. & Tr. ii. 303. A. D. C. v. 32. A. J. Ph. ix. 139.

EXTRACTS AND FLUID EXTRACTS.

Preservation. John B. Enz recommends, to preserve such extracts which are not in the state of powder, but, on the contrary, are hygroscopic, inclosed in bottles by Appert's method. Wittst. V. Schr. ix. 340. A. J. Ph. viii. 555.

The Examination of Extracts containing alkaloids is effected by W. Gundermann, by suspending them in water and treating with chloroform. Archiv d. Ph. clii. 43, 44. A. J. Ph. ix. 216.

The previous addition of an alkali or alkaline carbonate appears advisable.

Preparation of Extracts. N. S. Thompson recommends, for ext. hyoscyami and other narcotics, a process whereby all matter soluble in alcohol and in water is gained. J. Md. Coll. Ph. 1860, Sept. A. J. Ph. viii. 539. A. D. Circ. iv. 311.

Why load extracts with gummy, mucilaginous and other principles which are exceedingly prone to change, not to speak of the dilution of the extracts by such a course?

P. Squire advocates the employment of the young stalks, flowers and fruit together with the leaves, as yielding a more active extract. Ph. J. & T. iii. 300. A. J. Ph. x. 169. A. D. Circ. vi. 23. See also discussion on this subject before the London Pharmac. Society, and papers by Thos. B. Groves, Ph. J. & Tr. iii. 375, and by G. B. Francis, ibid. 377. Also a paper on the influence of cultivation upon medical plants, ibid. 430.

Extractum Ammoniaci Aceticum, the Emplast. Ammon. of the Pharmacopœia. 10 lb. of best ammoniac yielded to Professor Procter, 11 lbs. of acetic extract, by the officinal process. A. J. Ph. x. 210.

Extractum Anthemidis fluidum. J. A. Heintzelmann exhausts the flowers with alcohol of ·809 sp. gr. A. J. Ph. ix. 389.

Extr. Belladonnæ radicis. With a mixture of 3 p. alcohol and 2 p. water, Mayer obtained 26·64 per ct. extract containing 1·02 per ct. atropia. N. Jahrb. d. Ph. xvi. 24. A. J. Ph. x. 329.

Extr. Carnis. See Prof. Christison's process for beef fibre juice, in A. D. Circ. v. 233.

Extr. Cardui benedicti fluidum. G. Dohme exhausts the root with diluted alcohol and preserves it by 6 oz. sugar for each pint, representing ℥xvi. J. Md. Coll. Ph. A. D. Circ. v. 31.

Extr. Cimicifugæ, by J. F. Moore's process, contains the powdered resin mixed with the extract exhausted by diluted alcohol. His

Extr. Cimicif. fluidum contains, as preservative menstruum, diluted alcohol, which appears rather too weak for such a concentrated tincture. J. Md. Coll. Ph. 1861, March. A. J. Ph. ix. 343. A. D. Circ. v. 83.

Extr. Colchici saccharatum of D. Joyeux, stated to be the most reliable preparation of Colchicum, is the juice inspissated in vacuo, 1 part mixed with 5 p. sugar; daily dose, ʒi. Gaz. des Hôpit. A. D. Circ. v. 10.

Extr. Filicis maris. Pavesi, of Mortara, treats the lime precipitate in the mixed tincture and infusion with boiling alcohol; this oleo-resin he calls *aspidin.* Jiorn. di Farmac. di Chim. di Torino. A. J. Ph. x. 35.

If a complex body, it deserves not the name of a chemical compound.

Extr. Gentianæ. Feldhaus digests the root with water of 45° C., and treats the evaporated infusion with an equal bulk of strong alcohol. Arch. d. Ph. cvii. 294. A. J. Ph. x. 37. See also, remarks on the same subject by Leibundgut in ibid. 132, and ibid. 175.

Extr. Glycyrrhizæ. W. Wollweber urges apothecaries to prepare this extract, as large quantities of an adulterated article from France, and some German places, are met with in commerce. N. J. d. Ph. xvii. 205.

Extr. Ipecacuanhæ fluidum. Prof. Procter modifies the process (See Proc. A. Ph. Ass. 1859) so as to separate all resin. A. J. Ph. x. 28.

Extr. Oleæ Corticis, of Faucher, of Batignolles, is the hydroalcoholic extract of the bark of the olive tree, and the most convenient form of exhibiting this remedy in intermittent fevers, neuralgia, &c. Rép. de Ph. xvii. 111.

Extr. Sarsaparillæ. Delondre & Dublanc treat first with cold water, afterwards with steam, and evaporate in a water bath; it resembles liquorice. Rép. de Ph. xviii. 262.

How much starch and other inert matter does it contain? and what becomes of the acrid principle?

Extr. Senegæ fluidum, by T. E. Kirby's process, contains neither alcohol nor sugar as preservative agents. J. Md. Coll. Ph. A. D. Circ. v. 31. How long will it keep?

Prof. Procter advises to add ℥ii. to iv. bicarbonate of potassa to the pint of his fluid extract (Proc. A. Ph. Ass. 1859) to keep the pectinaceous matter in solution. A. J. Ph. x. 136. Could not the pectin be kept out of the preparation by exhausting the root with strong alcohol?

Extractum, Extr. fluidum, and *Liquor taraxaci.* See the processes given by J. Schweitzer, in Ch. N. ii. 64. A. D. Circ. iv. 244, v. 83. Drugg. ii. 182.

The crystals formed in the extract were found by Prof. Ludwig, of Jena, to be lactate of lime. Arch. d. Ph. 1861, July. A. D. Circ. v. 206.

Extr. Valerianæ. Landerer recommends to evaporate the tincture in a still, so as to gain the acid and oil of valerian. N. Jahrb. d. Ph. xvij. 211.

Extr. Vanillæ fluidum. Ch. Shivers publishes his process in A. J. Ph. ix. 383.

Resina Podophylli. E. Parrish relates his experiments; he obtained 3 to 5 per ct. A. J. Ph. x. 133. See also J. M. Abernethy's remarks in the same journal, ix. 301.

On the Value of Extracts from different parts of narcotic plants, see a paper by Hirtz, in Gaz. Méd. Strasb. A. J. Ph. ix. 414.

SYRUPS AND HONEYS.

Syrups, Honeys, Acidulous and Inspissated Jucies keep unaltered according to Jno. B. Enz, if preserved by Appert's method. Wittst. V. Schr. ix. A. J. Ph. viii. 553.

Clarification of Honey. J. B. Enz follows Rebling's method by tannin and lime water. Ibid, 555.

Sugar in Syrups. W. H. Pile, Jr., has ascertained the apparent spec. grav. of sugar when dissolved in water; it occupies

after solution, of fluidounces, ⅘ the number of troy ounces. A. J. Ph. ix. 197.

Syrupus Amygdalæ was found by Landerer, to contain acetic ether after fermentation. Wittst. V. Schr. ix. 532.

Syr. Assafœtidæ. J. A. Heintzelmann triturates assafœtida with carbonate of magnesia and water, and filters before dissolving the sugar. A. J. Ph., ix. 211. A. D. Circ., v. 128. Is the undissolved portion destitute of medicinal properties?

Syr. Chloroformi. Carrié agitates 10 p. chloroform with 190 p. simple syrup. Dorvault's proportions are 2 chloroform and 200 syrup. Rép. de Ph. xviij. 35. Bouchut uses 4 chloroform, 16 to 32 alcohol, 500 syrup. Ibid, 56.

Syrup. Ferri Iodidi. Dr. W. H. Pile filters the solution of the iodide into the boiling syrup. A. J. Ph. x. 299.

Fougera has already proposed the application of heat. Is not the formation of grape-sugar thereby promoted?

Syr. Ferri pyrophosphatis of W. A. Thompson contains the protosalt of iron. J. Md. Coll. Ph. A. D. Circ. vi. 106.

Syrupus Opiatus officinal in Nassau: Extr. Opii Aquos. gr. xxv. Vini Madeir. ℥j. Syr. Glycyrrhizæ lb. ij. M. Archiv d. Ph. ciii. 99.

Syr. Rubi Idaei. W. Wollweber ferments the juice of raspberries and similar fruits in a nearly full flask, the neck of which is loosely stopped with cotton. Dissolving the sugar with the aid of heat, he considers unnecessary. N. Jahrb. d. Ph. xvii. 86.

Syrup. Santonini, containing 3 grs. in the ounce, is recommended by the Bull. de Thér. See A. D. Circ. v. 171.

Acetic Syrups. E. S. Wayne recommends to prepare Syr. Ipecac., Scillæ compos., Senegæ, Hepaticæ, Marrubii, and Sennæ, from a vinegar. Drugg. A. D. Circ. v. 187.

Mineral Water Syrups. E. S. Wayne gives formulas for their preparation. Drugg. A. D. Circ. v. 136. See likewise J. T. Shinn in A. J. Ph. ix. 309.

Syrupus Sodii Chloridi. Dr. Pietra uses 200 water, 125 table salt, 400 sugar and 30 p. cherry laurel water. L'Union Méd. A. D. Circ. vi. 338.

Mel Rosæ is prepared by Mollier of Paris by boiling down the honey with the infusion of roses gradually added.

MIXTURES.

Chlorodyne. Dr. E. R. Squibb exposes the "humbuggery" of this preparation in A. Med. T. A. D. Circ. v. 39.

Chloroform Mixture of Dr. Bouchut: Chloroform 2, alcohol 16, water 300 p. Rép. de Ph. xviii. 55.

Amédée Vée urges the importance of exhibiting chloroform, ethers and volatile oils internally, by mixing with a vegetable oil and forming an emulsion. Rép. de Ph. xvii. 470.

Cholagogue. Dr. Mayes, of South Carolina, gives the following as closely resembling Osgood's nostrum: Quiniæ Sulph. ℈ij. Ext. Leptandræ f.ʒi. Tinct. Stillingiæ conc. ℥iv. Ext. Podoph. f.ʒiij. Ol. Sassafr. Ol. Gaultheriæ *aa* gtt. x. molasses or treacle q. s. to make 8 fluid ounces. Drugg. ii. 170. A. D. Circ. IV.

Emulsion of Cannabis Indica, &c. See experiments by H. H. Githens, in A. J. Ph. ix. 203.

Emulsion of Wax. See the manipulation described by Alliot, in Rép. de Ph. xvii. 428. A. D. Circ. v. 173.

Laine's Febrifuge Draught: Decoct. Cinchonæ 125 grm. Æther. gtt. 25. Vin. Opii. gtt. 15, Quiniæ Sulph. grm. 7. To be taken four hours after the chill, in two doses, a quarter of an hour intervening. J. de Ph. et de Chim. xxxviii. 382.

Dr. Benson's Whooping Cough Mixture: Acid. Hydrocyan. gtt. vi. Ext. Bellad. gr. ij. Tinct. Opii Camph. ʒiij. Syr. Tolutan. ℥ij. Aquæ ℥iij. mix. Louisv. Journ. A. D. Circ. v. 131.

Morphia in Marshmallow Syrup was observed by E. Janota, to be decomposed in a short time. Oesterr. Zeitschr. 1860, 16. A. J. Ph. ix. 409.

F. Eymael, in some notes, observes the following:

Sulphurets of Antimony, prescribed in acid mixtures, evolve sulphuretted hydrogen.

Perchloride of Iron is incompatible with the medicated syrups, on account of the tannin contained in the latter. Echo Méd. de Neufch. A. D. Circ. v. 187.

JELLIES, CAKES, &C.

Oil Jellies. E. Parrish & W. C. Bakes use the following ingredients: Oil ℥j. Honey, Syrup, each f.℥ss. powd. Gum Arabic

℥ij. Russian Isinglass gr.xl. Orange-flower water f.℥vi. See A. J. Ph. ix. 4.

Cod Liver Oil Jelly is prepared by Bassil, by mixing the oil with jelly from roasted bread. A. D. Circ. v. 62.

Panis Laxans. A solution of jalap resin is painted over the underside of biscuits, and the spot covered with a saccharine mixture. See A. J. Ph. ix. 115.

Wafer Envelopes, for swallowing powders, pills, &c., of repulsive taste. E. Parrish & W. C. Bakes treat of their preparation. A. J. Ph. ix. 5.

PILLS.

Excipients. H. H. Githens recommends tragacanth and honey for insoluble powders, and soap and honey in the case of camphor. A. J. Ph. ix. 206.

Coating of Pills. Furley, of Scotland, has patented in England, the use of albumen for this purpose. See A. J. Ph. x. 137. To fasten the sugar to the surface of pills, mucilage, syrup, tincture of tolu, &c., have been previously suggested; various resinous tinctures have also been used for rendering pills tasteless. See Proceedings of former years, and consult the remarks offered by H. H. Githens in A. J. Ph. ix. 206, by B. S. Proctor in Ph. J. & Tr. 1862. A. J. Ph. x. 318, and by E. Parrish & W. C. Bakes, A. J. Ph. ix. 1.

Cod Liver Oil Pills, so-called, of Despinoy, of Lille, purporting to be made of an extract of that substance, were analyzed by Dr. Garreau. Ch. & Dr. June, 1861. A. J. Ph. ix. 503.

Copaiva is rendered free from its disagreeable odor and taste by tar, as suggested by Beyrau; for pills he recommends Copaiva, Tar, equal parts; Magnesia q. s. Rép. de Ph. xviii. 272. See also the remarks on Ricord's Capsules of Copaiba combined with tar, pepsin and subnitrate of bismuth, in Med. News. A. J. Ph. ix. 381.

Ferri Iodidum, to be used in pills, is made by Vezu, by combining the elements in the presence of cacao butter, which completely preserves the iodide. Rép. de Ph. A. J. Ph. x. 186.

Pil. Ferri iodidi are made by Isaac Coddington, by the direct combination of iodine and iron and incorporating with a vegetable powder. A. D. Circ. vi. 105. Such a process, which has been suggested before, leaves nothing to desire, if the iron is used in excess.

Becquerel's Gout Pills: Quiniæ Sulph. 7½ grm. Ext. Digital. 1 grm. Sem. Colchici 2½ grm. Ft. pil. No. 50. Dose 1 to 3. Rép. de Ph. A. D. Circ. v. 190.

Beau's Metrorrhagic Pills: Pulv. Rutæ 0·015 grm. Pulv. Sabin. 0·05 Ft. pil. 6. 1 morning and night. Rép. de Thér. J. de Ph. et de Chim. xxxviii. 461.

Lartigue's Rheumatic Pills were analyzed by Wittstein, who found in each 2 grains powdered colchicum seed and ½ gr. sugar and mucilage. Wittst. V. Schr. x. 598. A. J. Ph. x. 328.

Sedative Pills: Assafœt. ʒj. Morph. Sulph. gr. iii. Ft. pil. 30. Moniteur. A. D. Circ. iv. 343.

Cachou Aromatique Italienne. See formula in Bull. de Thér. translated into Ch. N. ii. 84. A. D. Circ. v. 207.

PASTILLES.

Dr. Corbel Lagneau prepares medicated pastilles, which are to be burned in the sick-chamber. From the numerous formulas for his "Cones Fumigatoires," we extract the following:

Iodine Cones: Iodine 5. Powd. Marshmallow 40. Nitre 35 grms. Alcohol and water sufficient.

Strammonium Cones: Powd. Strammonium 40. Nitre 40. Marshmallow or Lycopodium 10 grms. In the same manner prepare belladonna and digitalis cones.

Camphor Cones: Camphor, Nitre, Marshmallow, of each 30 grms. Each formula is to yield 10 cones.

The cones of tar, tolu, benzoin, and oxide of zinc contain 3 grms., of opium 4 grms. each. Rép. de Ph. xviij. 401.

FUMIGATIONS.

Dr. J. B. Nevins reminds of the efficiency and convenience of applying many medicines in the state of vapor. Brit. M. J. A. D. Circ. iv. 266.

SUPPOSITORIES.

Dr. Pfeiffer recommends to keep on hand moulded suppositories, hollow at the base, into which the medicinal substance is put. J. des Connaiss. A. J. Ph. ix. 115.

E. Parrish and W. C. Bakes give some practical suggestions for preparing them extemporaneously. A. J. Ph. ix. 5.

A. B. Taylor casts suppositories in metallic moulds, and has made a *suppositor* for inserting them. A. J. Ph. ix. 202.

CERATES, OINTMENTS AND PLASMATA.

Steadine is recommended as a substitute for lard, particularly adapted for such ointments as readily become rancid. It is composed of 3½ oz. lard, 3½ oz. water, and 15 grs. caustic soda, and contains consequently some soap. Ph. J. and Tr. ii. 341.

Cotton Seed Oil has been found available by W. H. Weatherly, for the preparation of Ung. Aquæ Rosæ, Ung. Hydrarg. Nitr., Cer. Plumbi Subacet., Cer. Cetacei, Linim. Ammon. and Linim. Camphoræ. A. J. Ph. ix. 208.

Ung. Cadmii Iodidi is prepared by Ch. A. Heinitsh from Iodide of Cadmium ℈i. Lard ℥i. Oil of Neroly gtt.x. Ether gtt. xx. A. J. Ph. x. 382.

Ung. Hydrargyri. Opitz succeeded under Prof. Ludwig's direction to prepare it satisfactorily by reducing the mercury from corrosive sublimate with gaseous sulphurous acid, and washing by decantation before mixing it with the fat. Archiv d. Ph. cx. 1.

Schiaparelli extinguishes the mercury first with 1-10th of its weight of honey. Jiorn. di Farm. di Torino. Archiv d. Ph. civ. 236.

Ung. Hydrarg. Nitratis. J. Schweitzer publishes his mode of preparing it with the ingredients of the London Pharmacopœia. Ch. N. A. D. Circ. iv. 244.

Ung. Hydr. Oxidi. J. A. Barker substitutes yellow for white wax, and obtains a more permanent preparation, which is not colored by an iron spatula. Ph. J. & Tr. ii. 533.

Apé of Zell prepares this ointment at the request of some physicians, from the oxide, precipitated by pottassa from corrosive sublimate. N. fahrb. d. Ph. xvi. 302. Precisely the same process was suggested by Thos. S. Wiegand, in A. J. Ph., 1858, 407.

Ung. Plumbi Iodidi with chloride of sodium, is, according to F. Eymael, of a yellow color, if the salts have been triturated in the dry state, but it is white if the chloride has been dissolved in water. Echo Méd. de Neufchatel. A. D. Circ. v. 187.

Ung. Potassii Iodidi remains white, according to F. Mohr, if a small quantity of hyposulphite of soda is added. N. Rep. x. 147.

H. Münch found that besides benzoin, resin (2 grs. to ℥i.) preserves it white for one year. N. Jahrb. f. Ph. xii. 23. See also Thibault's glycerine pomade of iodide of potassium, in Rép. de Ph. A. J. Ph. ix. 236.

Ung. Potassii Iodidi and *Ung. Iodinii comp.* H. Hall uses glycerine as a solvent. Ph. J. & Tr. ii. 500.

Pomata contra varos: Sulphur, Tannin, conc. Bitter Almond Water, each 5 p., Oil of Thyme, Oil of Bergamot, each 1 p., Lard 60. Pharm. Cent. H. i. 1. A. J. Ph. ix. 116.

The following plasmata have been introduced, according to Ch. N. iv. 6, into the Pharmacopœia of the Royal London Ophthalmic Hospital, and contain to starch ʒiss. glycerine ʒxss. the ingredients mentioned:

Plasma Cupri Sulphatis: Sulphate of Copper gr. 24.

Plasma Extr. Belladonnæ: Extr. Belladonna gr. 45.

Plasma Hydrargyri Ammoniati: White Precipitate gr. 30.

Plasma Hydrargyri Oxidi: Red Precipitate gr. 45.

Plasma Hydrargyri Subnitratis: Sub (proto?) nitrate of Mercury gr. 40.

The medicinal substance is first dissolved or triturated with the glycerine before this is heated with the starch.

Plasma Plumbi. Ch. S. Tilyard uses Glycerine f.℥ij. Subacetate of Lead f.ʒiij. Arrow-root ʒiss. Camphor gr. x. The manipulations are related in J. Md. Coll. Ph. 1861, March. A. J. Ph. ix. 257. A. D. Circ. v. 83.

Ceratum Cetacei keeps, according to J. B. Barnes, best with unbleached olive oil, and still longer with unbleached wax. Ph. J. & Tr. 1861, January. A. J. Ph. ix. 154.

Ceratum Plumbi. Eggenfels suggests the employment of digestion to insure partial saponification, which will preserve its white color. N. Jahrb. f. Ph. xiv. 367. A. J. Ph. ix. 407.

If the statement is correct, why do the emplastrum plumbi and the ceratum saponis, both of which are lead soaps, soon assume a darker color?

PLASTERS.

Moulding of Plasters, containing vegetable powders, is prevented by Hirschberg, by expelling all the water. Archiv d. Ph. ciii. 1651. A. J. Ph. ix. 313.

Sticky Plasters are prevented from adhering to paper, &c., by lycopodium, which is wiped off before application. Schweiz. Z. f. Ph. vi. 169. A. J. Ph. x. 38.

Stearate of Iron is used by Ricord for dressing soft or phage-

dænic chancres; it is made by double decomposition of sulphate of iron and soap. Journ. de Ph. et de Chim. A. D. Circ. iv. 279.

F. F. Mayer finds that it remains soft if prepared from the persulphate of iron. A. D. Circ. v. 37.

Empl. Adhesivum, if too soft, is rendered fit for use by Feldhaus, by adding a little plaster prepared from lard. Archiv d. Ph. civ. 29. A. J. Ph. ix. 315.

Empl. Plumbi. W. Lienau manipulates somewhat different from the usual directions; he heats most of the oil previous to the addition of litharge, and then adds a little hot water. Archiv d. Ph. civ. 270. A. J. Ph. ix. 317.

Empl. Opii. See some remarks by Prof. Procter. A. J. Ph. x. 210.

Corn Plaster: Powd. Galbanum ℥i. Turpentine gr. x. Sal ammoniac in fine powder 8 grs. M. Müller's Ph. Z. 1861, v. 1. A. J. Ph. x.

Blistering Paper. Cantharidine 1, White Wax 1, Olive Oil 5 parts; to be painted on white bibulous paper. Ph. J. & Tr. ii. 245. A. J. Ph. ix. 280. A. D. Circ. v. 7.

Court Plaster. A. Schlimpert uses a dilute solution of gelatine, which is repeatedly painted over silk with some mucilage of quince seed. Hirzel's Zeitsch. xii. 27.

LINIMENTS AND WASHES.

Aqua St. Johannis: Sulphate of Zinc ʒi. Sulphate of Copper ℈i. Water ℥xxxvi. Tinct. Saffron ʒij. Tinct. Camphor ℥ij.; used as a vulnerary. Ph. Centr. H. A. J. Ph. ix. 116.

Arnica Hair Wash: Elder Water Oss. Sherry Wine Oss. Tinct. Arnica ℥ss. Alcoholic Ammonia ʒj. Druggist. A. J. Ph. ix. 473.

Beyran's Wash for Phagedænic Ulcers: Chloride of Zinc 1. Water 100 p. Rép. de Ph. A. D. Circ. v. 190.

Hardy's Freckle Wash: Corrosive Sublimate, Sulphate of Zinc, Acetate of Lead, each 2 parts, Distilled Water 125 parts. Monit. d. Sc. A. D. Circ. iv. 283.

Baume Tranquille. See the formula as given by Wm. C. Bakes. A. J. Ph. x. 22.

Frankine's Application for Burns is a solution of 8 p. Gum

Arabic in 100 p. Cherry Laurel Water. J. de Ph. et de Chim. xxxviii. 463.

Guibert's Application to Ulcers: Creosote gtt. 12. Glycerine grm.125. Rép. de Ph. xvii. 162.

COLLYRIA.

Foucher recommends Glycerine as a medium for collyria, and gives a number of formulas, in J. de Ph. et de Chim. xxxviii. 285. Ch. N. ii. 306.

GARGLES.

Dr. H. Green's Creasote Gargles. 1. Creas. gtt. 24, Tinct. Myrrh. grm. 12, Tinct. Lavand. comp. grm. 12, Syrup. grm. 24, Aquæ, grm. 150. M.

2. Creas. gtt. 20, Tinct. Capsic. grm. 6, Tinct. Myrrh. grm. 12. Tinct. Lav. cp., Syr. Aq. as before. Bull. de Thér. J. de Ph. et de Chim. xxxviii. 380.

REMEDIES FOR TOOTHACHE.

Creasotum Chloroformatum. Creasote, 1 p. Chloroform, 2 p. Alcohol, 2 p. A. J. Ph. ix. 116.

Solidified Creasote. The Bull. de Thér. recommends under this name a mixture of 15 parts Creasote with 10 p. Collodion; also used as a hemostatic, &c. Rép. de Ph. xviii. 403.

Chloroform Liniment. Albumen, Chloroform, equal bulk, to be digested for 4 hours. The following is a stronger preparation: Albumen, 1 part, Chloroform, 4 parts; at a temperature of 120° to 140° it gelatinizes in 4 minutes. A. J. Dental Sc. A. J. Ph. ix. 329.

Pâte Iodifère, a French nostrum, was found by Leimbach to be Arsenious acid, 1 p., Muriate of Morphia, 3 p., rendered pasty by Glycerine. N. Jahrb. d. Ph. xvi. 272. A. J. Ph. x. 329.

INJECTIONS AND CLYSTERS.

Gamberini's Injection in Gonorrhœa: Tinct. Aloes, ʒiv., Aquæ, ℥iv. Lancet, 1860. A. D. Circ. iv. 343.

Valerius' Injection in Dysentery: Alum. ʒii.–iii., Ext. Valerianæ, ʒi., Tinct. Opii, gtt. xvi., Amyl. ℥i., Decoct. Althææ Oj. Used for two injections in 24 hours. A. D. Circ. v. 107.

Glycerine with Mucilage of linseed is employed by Dr. Daude

in the form of clysters in beginning dysentery. Ph. Cent. H. i· No. 6. A. J. Ph. ix. 116.

CAUTERIZERS.

Moulded Chloride of Zinc is prepared by softening gutta percha in boiling alcohol, incorporating it with an equal quantity of pulverized chloride of zinc, and rolling it out to thin sticks. Rép. de Ph. xvii. 21. Dental Cosmos, ii. 133.

Caustic for Carious Toothache. Dr. Calvy, of Toulon, uses a solution of 6 grs. Acetate of Morphia in 1 oz. Nitric Acid. Gaz. des Hôp. 1861. A. J. Ph. ix. 474.

OTHER PREPARATIONS.

On some applications of Glycerine, see a paper by G. Wilson, and the discussion before the London Ph. Soc. in Ph. J. & Tr. A. J. Ph. ix. 158.

Wax Paper is prepared by drawing paper through a solution of wax in 8 p. oil of turpentine, whose odor disappears in 24 hours. Wittst. V. Schr. ix. 587.

Oiled Paper. Dr. McGhie recommends it as a substitute for oiled silk; it is prepared by painting tissue paper with boiled linseed oil mixed with some wax and oil of turpentine. Bost. M. & S. J. A. J. Ph. x. 365.

APPARATUS AND PROCESSES.

We include in this place, for the sake of convenience, Chemical and Analytical Apparatus, besides such of strictly Pharmaceutical use.

Platinum Vessels. Erdmann cleans platinum vessels with well worn sand. A correspondent of Chem. News, Nov., 1860, recommends an amalgam of mercury and sodium for this purpose. A. J. Ph. ix. 164.

Dr. H. Dulla covers unglazed porcelain or rough glass vessels with platinum, by giving them repeatedly a thin cover of Pt Cl and heating after each application to isolate the metal. J. f. pr. Chem. lxxviii. 367.

Elsner's process for porcelain vessels consists in painting them with platinum black rubbed up with oil of turpentine, and burning in a furnace. Chem. Tech. Mitth. Ch. N. iv. 13.

Furnaces and Gas. Dr. L. C. Levoir, argues from his experiments with gas flames, that chimneys ought to be built obconical. Ch. N. iv. 60.

C. M. Warren has constructed a *Safety Lamp* for laboratories, on the principle of Davy's lamp for miners. A. J. of Sc. & Arts. A. J. Ph. x. 217.

W. L. Fish, of Newark, N. J., has obtained a patent for a Lamp-heating attachment, consisting of a chimney surrounded by the vessel containing the liquid; a light iron stand surmounts the chimney for supporting vessels. The apparatus is applicable for coal oil and gas flames. Scientific American, 1862.

Gas Furnaces and Appurtenances are described and figured by E. Parrish, in A. J. Ph. viii. 529, by J. Joseph Griffin, in Ch. N. iv. 233, and A. J. Ph. x. 46; and a reverboratory Gas Furnace designed for heating crucibles, &c., by Griffin, in Ph. J. & Tr. ii. 579. A. J. Ph. ix. 533.

Condensers. Feldhaus alters Liebig's condenser so as to have the inner tube in zigzag form. Arch. d. Ph. 285. A. J. Ph. ix. 215. A Condenser, the inner partition of which is in zigzag and which has the cooler on this side only, has been constructed by Wm. R. Warner, of Philadelphia; see A. J. Ph. ix. 15. The Tubular Condenser of Thomas Keates, of London, consists of vertical tubes, running from a vapor chamber through a cooler. See description and figure in Ph. J. & Tr. ii. 545. A. J. Ph. ix. 500.

Of a very simple construction, and answering all practical purposes for Distilling and Evaporating, is the apparatus in use by W. Neynaber, of Philadelphia, which is figured and described in N. Repert. d. Ph. xi. 9.

A *Digester* has been constructed by Fleury, which is founded upon the condensation of the hot vapors of the menstruum in a digesting glass cylinder. J. de Ph. et de Chim. xli. 282.

Displacement. Signoret, of Paris, has constructed an apparatus intended to supersede ordinary percolators; it is, in fact, displacement under strong pressure. Rép. de Ph. xvii. 372. A. J. Ph. ix. 319.

Adrian finds serious objections against this process for preparing alcoholic tinctures, aud prefers maceration. J. de Ph. et

de Chim. xli. 116. His objections have long since been practically met in the United States, where the process is universally employed, and they are refuted by Vuaflart in the same Journal xli. 257, and by Boullay, ibid, 264.

Some practical observations on Displacement were laid before the London Pharmaceutical Society by G. W. Sandford, and elicited some remarks by Deane, wherein he related the difficulty of exhausting poppies by water. Ph. J. and Tr. ii. 355.

The *Dropping Machine* of Salleron's construction yields at 15° C. 20 drops of distilled water weighing exactly one gramme. O. Reveil has experimented with it on numerous liquids, and gives several tables in Rép. de Ph. xviii. 356.

Beindorf's Apparatus ought to be called after Geiger, who planned it, while it was merely executed by Beindorf. W. Wollweber gives some practical suggestions for working with it in the laboratory; he also recommends a cooler with a movable worm for preserving it in good condition. N. Jahrb. f. Ph. xvii. 82.

Filters. To strengthen the filters, Prof. Malapert, of Poitiers, places a disc of cloth within the pulp of the paper in its centre. Ph. J. and Tr. ii. 342. A. J. Ph. ix. 32.

Gun Cotton is employed by Prof. Boettger for filtering acids, alkalies, &c. Ann. d. Chem. und Ph. xxxviii. 111. A. J. Ph. viii. 449.

Dr. Loewe uses in most cases where the filtrate is to be used, and not the precipitate, a filter made of asbestos previously purified by potassa, muriatic acid and water; the filter need be but ⅓ or ¼ the size of the funnel, so as to close thereby the neck. Archiv d. Ph. cv. 57.

Dahlke has adapted his filters, containing a block of silicated carbon, for chemical liquids. Ch. and Dr. 1861, Jan. A. J. Ph. ix. 229.

Wm. R. Warner has constructed an ingenious, but very simple apparatus for filtering oils upwards, under considerable pressure, exerted by the column of the oil. A. J. Ph. ix. 13.

On *Chemical Stoneware* and its manufacture, see a paper in the Ch. and Dr. 1861, July. Copied into A. J. Ph. ix. 585.

A *Press*, for small quantities of Infusions and Decoctions, is constructed by Müller, of Sangerhausen; it is a tin infusion pot,

fitted with a perforated piston, which is to be covered with gauze. See description and figure in Archiv d. Ph. cix. 34.

Analytical Apparatus. Dr. H. Minchin notices a new instrument for determining the *Quality of Milk*, consisting of a shallow glass vessel of about one ounce capacity; a slab of white enamel, graduat·d, is inserted at a gentle slope. After filling and covering with a glass plate to the exclusion of all air bubbles, less will be visible of the slab in proportion to the richness of the milk. Dub. M. Press. Ch. N. ii. 135.

In giving instructions for the use of the *Urinometer*, Bouchardat publishes several tables for correcting the specific gravity, and treats then of the fixed residue of urine as a means of diagnosis in health and disease. Rép. de Ph. xvii. 397.

E. J. Reynolds has constructed a *Carbonic Acid Apparatus*, differing from Fresenius' and Will's in containing the sulphuric acid flask within a larger one for the reception of the corbonate. Ch. N. v. 142.

Mr. Weir exhibited before the Liverpool Chemists' Assoc. a new *Alkalimeter*, described and figured in Ph. J. & Tr. ii. 242.

A new *Burette*, constructed by Jno. T. Miller, is figured and described in Ph. J. & Tr. ii. 562 and 606.

Lipowitz recommends a new *Clamp*, which appears to be an improvement over the old patterns. See Archiv d. Ph. cv. 316. Kühtze's Not. xxv. 126.

MATERIA MEDICA.

VEGETABLE DRUGS.

In arranging the vast material belonging under this head, we have founded the systematic enumeration of the investigations mainly upon the classification adopted in Lindley's Flora Medica. The proximate analyses are included here as well as the adulterations and impurities of drugs noticed in the journals during the last two years.

RANUNCULACEÆ.

Anemone Ludoviciana. A. W. Miller found in the preserved juice, sugar, tannin, gallic acid and resin; in the flowers, the same

constituents and waxy matter; in the dried leaves, similar compounds and pectin, and a volatile acrid matter (anemonine?) The analysis of the ashes is very insufficient. A. J. Ph. x. 300.

Hydrastis Canadensis, Lin. What has been used by the Eclectics as hydrastine, was found by Dr. F. Mahla to be berberina. A. J. Sc. & A. 1862. A. J. Ph. x. 141. Subsequently, this statement was corroborated by J. D. Perrins in Ph. J. & Tr. 1862, May, A. J. Ph. x. 360, who found, besides it, Durand's hydrastia, which was overlooked by Dr. Mahla. See also remarks on this subject by Wm. S. Merrill, in A. J. Ph. x. 308.

Ranunculus sceleratus, Lin. The acrid principle was found by O. L. Erdmann to be a volatile oil, very rapidly altered into anemonine and anemonic acid. Erdm. Journ. lxxv. 4. Archiv d. Ph. cii. 338.

Ran. Ficaria, Lin., Pilewort, petite éclaire. Drs. Debout and Martin found an acid similar to that of other Ranunculaceæ (anemonic?) and an extractive called ficarine. It is proposed to use the root, the part employed for piles, in the form of an infusion, decoction, fumigation, syrup, tincture, extract and as lotion, combined with water, glycerine or fat. Bull. de Thér. A. D. Circ. iv. 283.

Helleborus. According to the intensity of their effects the various species must be arranged as follows: Hell. niger, Lin., Ponticus, H. Braun; purpurascens, Waldst. & Kit; fœtidus, viridis, Orientalis, the latter being the strongest. Zeitschr. d. Aerzte zu Wien. A. J. Ph. ix. 426. Cannst. Jahr. f. 1860. 55.

The rhizoma of Helleborous niger is frequently adulterated with the rhizoma of Actæa spicata, L., as was observed by Prof. Bentley. Ph. J. & Tr. iii. 109.

Aconitum. Prof. Berg has subjected the three species of Aconitum, A. napellus, Lin., A. variegatum, Lin., and A. Stœrkeanum, Reichenb., to a searching examination as to their morphological and anatomical conditions; also A. ferox, Wallich. Bonplandia, viii. 352. Cannst. Jahr. f. 1860, 56.

Prof. Mettenheimer again directs attention to the importance of using wild-grown aconite for pharmaceutical preparations instead of the cultivated. See A. D. Circ. v. 171.

Dr. D. D. Hanson, of Hartford, reports a case of poisoning

by aconite, in which nux vomica was employed as an antidote. Bost. M. & S. J. 1861, Sept. 26. M. & S. Rep. vii. 391.

Delphinium. Garden Larkspur, leaves and flowers, (of which species? D. consolida, Lin.?) are recommended as a remedy for vomiting in pregnancy. M. & S. Rep. vii. 89.

Cimicifuga racemosa, Ell. In some therapeutical and pharmaceutical notes on black snakeroot, E. Parrish draws attention to the Maltese Cross exhibited by the ligneous centre upon the cross section of the radicles. M. & S. Rep. A. D. Circ. v. 106.

Prof. R. Bentley gives a full botanical history, a description of the rhizoma and rootlets, the pharmaceutical preparations and the mode of distinguishing this drug from hellebore and aconite roots. Ph. J. & Tr. ii. 460. iii. 109.

J. H. Davis has analyzed black snakeroot, without finding anything of importance. A. J. Ph. ix. 391.

Dr. Simpson gives an account of the therapeutic value of this drug in rheumatism, rheumatic fever, chorea, &c. Lond. M. Times. A. D. Circ. v. 35.

Xanthoriza apiifolia, L'Her. J. D. Perrins announces the existence of berberina in this drug. Ph. J. & Tr. 1862, May. A. J. Ph. x. 356.

PODOPHYLLACEÆ.

Podophyllum peltatum, Lin. The M. & S. Rep. vii. 260, has an editorial note stating that Podophyllin is coming into use as a therapeutic substitute for mercury. Dr. Brown, of Hampton, N. J., has used the rhizoma in secondary syphilis, ibid, 300, also W. M. M. Fleming, of Rochester, N. Y., ibid, 465.

SARRACENIACEÆ.

Sarracenia purpurea, Lin. Pitcher plant. Dr. Herbert Miles states that some North American Indians use the rhizoma as a preventive and cure for small pox. See A. D. Circ. iv. 26. See also letter of Dr. F. W. Morris of Halifax, in A. Med. T. iv. 287. A. J. Ph. x. 362.

PAPAVERACEÆ.

Papaver somniferum, Lin. Guibourt, in a paper on the assay of opium, and the quantity of morphia contained in it, states that the opium of Anatolia is produced from the white, Aubergier's

opium from the red, and Bénard's (from the north of France,) from the black variety of poppy. He examined many samples of opium by a modification of Guillermond's process, and concludes that good medicinal opium ought to contain in the moist state (15 per cent. water,) 10·20 to 12·75; in the hard state (7·5 per cent. water,) 11·10 to 13·87, in the dry state 12 to 15 per cent. morphia. Journ. de Ph. et de Chim. xli. No. 1, 2, 3.

H. Lepage writes on the production of opium in France: he obtained by Fœdos' process from opium of his own growth, between 11 and 12·5 per cent. morphia. Echo Méd. de Neuch. A. J. Ph. ix. 457.

Prof. Bénard, of Amiens, and A. Colas, of Paris, have continued their researches on the production of opium in France, which they found, in quality, equal to the best Levant opium. The production is lucrative, and does not interfere with the collection of the seeds. J. de Ph. et de Chim. Ph. J. & Tr. ii. 229. A. D. Circ. v. 54. A. J. Ph. ix. 52.

Dr. O. Reveil describes Persian opium imported into Europe, in the form of thin cylindrical sticks; it contains a very large amount of matter, soluble in water and in alcohol, (80 to 93 per cent.) and but little morphia (5 to 7 per cent.); it is not adapted for Pharmaceutical preparations. J. de Ph. et de Chim. A. J. Ph. ix. 48.

Opium which had been kept for 20 years, was found by Guibourt to yield less and more highly colored morphia, than in the fresh state; the extractive matter undergoing changes on keeping, induces decomposition, likewise of some morphia. Rép. de Ph. xviii. 452.

Chelidonium majus, Lin. See a paper on the botanical history and pharmaceutical preparations, by J. M. Maisch, in A. J. Ph. ix. 7.

Grand-Clement states that its juice is a remedy for itching diseases of the skin, and can be preserved by an equal quantity of glycerine. A. J. Ph. ix. 474.

Chelid. Glaucium, Lin., grows on sandy shores, where scarcely anything else will thrive. Cloez found in the seeds 42·5 per cent. of oil, resembling poppy oil. Le Technol. A. D. Circ. v. 55. A. J. Ph. ix. 80.

MYRISTICACEÆ.

Myristica Bicuhyba, Schott. Th. Peckolt furnishes an extensive analysis of the exudation, bark and fruit of this Brazilian tree. The former are used as astringents, and the kernels as an antidote to snake-bites, internally and externally. Archiv d. Ph. cvii. 158.

MAGNOLIACEÆ.

Magnolia glauca, Lin. Wm. D. Harrison has examined the bark of the root and of the trunk, the leaves and the fruit, without obtaining any clue of the active proximate constituents; the nature of the crystals obtained from the root has not been cleared up. A. J. Ph. x. 29.

WINTERACEÆ.

Winter's Bark. Weissbecker observes, as the result of his microscopical examination, that the commercial Winter's bark and Canella alba, are derived from the same or nearly allied trees, but not from Drymis Winteri, Forst. Prof. Schenk, after examining the bark of a stem of Canella alba, finds it to differ from all before mentioned. N. Jahrb. d. Ph. xiii. 224. A. J. Ph. ix. 28.

Prof. Henkel, of Tübingen, shows that formerly the true bark of Dr. Winter was used, but that the present commercial Winter's bark is certainly derived from a Canella, if it, indeed, be not identical with the bark of Canella alba. An infusion of the true reddish brown Winter's bark yields with perchloride of iron considerable of a black-brown precipitate, with subacetate of lead, a dirty grayish-brown, and a turbidity with nitrate of baryta. N. Rep. d. Ph. x. 1.

Prof. Wiggers likewise declares the barks to be very different and readily distinguished, even without the aid of a microscope; though he admits the possibility that the origin of both may still be a matter of doubt. Cannst. Jahresb. f. 1860, 54.

MONIMIACEÆ.

Atherosperma moschatum. The bark is used in bronchitis and rheumatic affections, according to Dr. Aug. P. A. Greeves, of Melbourne. Lond. Lanc., 1862, i. 214.

N. J. Zeyer has analyzed this bark, and discovered an alkaloid, Atherospermia C_{30} H_{20} NO_5. See details of the analysis in Witts. V. Schr. x. 504. A. J. Ph. x. 165.

UMBELLIFERÆ.

Pimpinella Saxifraga, Lin. Dr. O. Berg draws attention to the false description of Radix Pimpinellæ in the Prussian Pharmacopœia, and gives a correct one of this root as well as its substitutes, Pimp. magna, Lin., P. nigra, Willd., and Heracleum sphondylium, Lin. Bonplandia, 1860, 70. Wittst. V. Schr. x. 46.

Fœniculum vulgare, Gaertn., is regarded by Prof. Gardner, as an excellent means for promoting the secretion of milk. See A. D. Circ. v. 201.

Thapsia Garganica, DeC., *Asclepium* and *fœtida*, are natives of the basin of the Mediterranean. Landerer states that their roots contain an acrid juice which is emetic, cathartic and poisonous; they have been substituted for turpeth root and are therefore sometimes called Turpetha spuria. N. Jahrb. d. Ph. xvii. 212. See also an account in A. D. Circ. v. 157. For the history of this drug compare Lindley's Fl. Med. 52.

Pimp. Anisum, Lin. The fruit has been observed mixed with hemlock seed, from careless gathering in the Romagna. Wittst. V. Schr. x. 254. A. J. Ph. ix. 408.

ARALIACEÆ.

Panax ginseng, Mey., a paper on ginseng root, in Lockhart's Missionary in China, gives information of the high esteem in which it is held by the Chinese. A. D. Circ. vi. 70.

GROSSULACEÆ.

Ribes nigrum, Lin., the black currant, is cultivated in France for the preparation of wine. See an account in A. D. Circ. 1861, Apr. A. J. Ph. ix. 222.

VITACEÆ.

Landerer states that the juice of unripe grapes is used in Greece as a substitute for lemon juice, and for vinegar; preserved with sugar it serves as a condiment. A. D. Circ. v. 225.

He also relates that the large raisins from *Vitis vinifera apyrena* are, before drying, immersed in a lye from the ashes of the vine, the solution being covered with a thin layer of oil; this is said to make them dry more readily, imparts a gloss and prevents their adhering together after packing. Archiv d. Ph. cix. 54.

The seeds of *Vitis vinifera*, L., grown on the Rhine, contain according to R. Wagner, 10·8 to 11·2 per ct. oil and 6·5 to 7·3 per ct. tannin. The dry stems yield about the same amount of tannin. A. J. Ph. x. 89.

MYRTACEÆ.

Myrcia acris, DeC., is, as appears from the investigations of J. M. Maisch, the plant, from which Bay rum is distilled. A. J. Ph. ix. 289.

He likewise details his experiments with the volatile oil. Ibid, 296.

Melaleuca Cajuputi, Roxb. The volatile oil was successfully used internally and externally in various diseases. For an account, see Presse Méd. Belg. 1861. A. D. Circ. v. 207.

CORNACEÆ.

Cornus florida, Lin. A paper on this plant and its uses, by Dr. G. S. Blackil, will be found in Nashv. J. M. and S., A. D. Circ. v. 128.

CUCURBITACEÆ.

Feuillea cordifolia, Vellos. Th. Peckolt states that the fruit is called in Brazil, Fava de S. Ignacio. The seeds are used against the colic of mules. They contain fixed oil, feuilline (a bitter principle,) resins, gum, tannin, glucose, and yield crystals probably of an organic alkaloid.

The seeds of *F. monosperma* are used as a cathartic. Archiv d. Ph. cix. 219.

Citrullus vulgaris, Schrad. The rind of the watermelon is used in Greece, according to Landerer, as a cooling application in inflammatory diseases, and is prepared for desserts by preserving it in sugar, grape juice or vinegar. Hirzel's Zeitschr. xii. 130.

Cucurbita Pepo, Lin. The seeds have again been made use of by Dr. Tarneau, in the form of a seed emulsion for expelling the tapeworm. Ch. N. ii. 90. A. D. Circ. v. 11.

Momordica Elaterium, Lin., s. Ecbalium officinale, Nees. J. Williams treats of the quantity of ecbalire contained in the fruit, in commercial elaterium and in German extract of Momordica. See A. D. Circ. iv. 265.

CANELLACEÆ.

Compare some remarks on Winter's bark, Winteraceæ.

TERNSTROMIACEÆ.

Thea Bohea, Lin. Léon Soubeiran gives some accounts of the tea culture in Brazil; the product leaves nothing to desire, except that it is wanting in the artificial perfume of Chinese tea. Rép. de Ph. xviii. 45.

SAPINDACEÆ.

Aesculus Hippocastanum, Lin. The statement of Stokes, that the bark contains fraxine, is corroborated by Prof. Rochleder. J. f. pr. Chem. lxxx. 173.

Dr. Stileson makes some remarks about the use of oil of horse-chestnuts in rheumatism, and about his process for obtaining it, viz.: exhaustion with ether. He thinks it may probably be identical in composition with croton oil. Forh. v. de Scand. Naturf. A. M. Monthly, xvii. 269.

We shall doubt this last statement until proofs are produced.

KRAMERIACEÆ.

Krameria triandra, DeC. In a paper on extract of rhatany, Prof. Procter states that the present commercial article yields less extract, and contains more ligneous, but less cortical matter than heretofore. A. J. Ph. x. 209.

May this not be due to the collection of roots from different species?

Dr. Demeaux has used the extract combined with alum, in diabetes.* Compt. Rend. 1861, July. A. D. Circ. v. 207.

LINACEÆ.

The "Bonplandia," 1862, No. 1, gives the following modes of distinguishing the filaments of

	Flax.	*Cotton.*
By Microscope,	Long, tubular, with narrow channel.	Flat, ribbon-like, turned like a screw.
Dilute Sulphuric Acid.	Finest fibres only attacked.	Soluble.
Triturated with olive oil.	Transparent.	Opaque, white.
Tincture of Cochineal.	Violet.	Light red.
Tincture of Madder.	Yellowish red.	Light yellow.

BYTTNERACEÆ.

Theobroma Cacao, Lin. Tucker has analyzed various kinds of Cacao; they contain between 0·38 and 0·67 per ct. theobromina. See A. J. Ph. viii. 544.

MALVACEÆ.

Gossypium herbaceum, Lin. Cotton seed cake was analysed by F. Crace Calvert; it contains albuminous matter 25·34, oil 8·46, sugar and gum 7·71, starch 10·73, woody fibre 27·80, mineral constituents 8·14, water and loss 11·82. Ph. J. Tr. iii. 485.

F. F. Mayer has met with a semi-solid oil of cotton seed, which had altered a great deal in consequence of having been kept in the crude state. A. D. Circ. v. 155.

The blue color obtained from cotton seed alters rapidly according to Kuhlmann's observations, when used for dying. A. D. Circ. vi. 6. L'invention.

Dr. H. S. Cornwell recommends cotton root as a substitute for ergot in protracted labor. Eclec. Med. Jour.

CEDRELACEÆ.

Cedrela febrifuga, Blume. Dr. F. A. Flückiger has made a minute microscopical examination of this bark, and compares it with the structure of Loxa bark. Schweiz. Z. f. Ph. vi. 125. A. J. Ph. ix. 505.

Fromberg examined this bark and found a bitter resin, tannin, and the usual constituents, but no alkaloid. Kühtze's Not. xxv. 117.

AURANTIACEÆ.

Citrus Lumia, Risso. The volatile oil expressed from the rind contains according to de Luca, a hydrocarbon, distilling between 180 and 190° C., and oxygenated compounds volatilizing below and above this temperature. Cpts. Rend. li. 258. A. D. Circ. iv. 339.

SPONDIACEÆ.

Spondias venulosa, Mart. s. *Sp. myrobalanus*, Vellos, yields much gum, called in Brazil Gummi Caja. It contains 0·47 per ct. tannin and makes a thick mucilage. Th. Peckolt uses it in place of tragacanth as an excipient for pastilles. Archiv d. Ph. cx. 44.

RHAMNACEÆ.

Rhamnus catharticus, Lin. Prof. Bolley obtained quercetine from the berries by exhausting them with ether, treating with water and crystallizing the precipitate from alcohol. Ann. d. Ch. and Ph. xxxix. 54. A. J. Ph. ix. 219.

A green dye, resembling the Chinese Lo-kao, has been prepared from the bark. The discovery was recommended by Glénard, for the prize of 6000 frcs. offered by the Lyons Chamber of Commerce. Ch. N. iii. 342.

Rh. Frangula, Lin. T. L. Phipson announces the discovery of rhamnoxanthine, a yellow coloring matter, resembling chrysophanic acid. Ch. N. iii. 255.

This crystalline coloring matter was discovered in 1852, by Buchner. See N. Rep. f. Ph. ii. 145, who called it rhamnoxanthine, and found it not only in Rh. Frangula, but likewise in Rh. catharticus. Arthur Casselmann made further researches in 1857. Compare N. Rep. vi. 500.

EUPHORBIACEÆ.

Croton Eleuteria, Lin. Dr. Follenberg found cascarilla to be a good galactopoietic. Mitth. aus Preussen. Rép. de Ph. x. viii. 498.

Cr. Erythræma, Mart. Th. Peckolt examined the astringent juice which the Brazilians call Sangue de Drago; it contains much tannin. Arch. d. Ph. cviii. 142. A. J. Ph. x. 334.

Cr. Tiglium, Lam. Dr. Foret advocates to dilute croton oil with oil of almonds and to give it repeatedly in small doses. Bull. de Thér. Am. Med. Monthly, xvii. 270.

Ricinis communis, Lin. A fluid extract of the leaves, acted in Dr. W. Gilfillan's hands as a valuable galactogogue. A. M. T. 1862, Jan. 11, April 19. Prof. Gardner likewise speaks highly of it. See A. D. Circ. v. 201.

Ric. inermis, Mill., var. *Manchuriensis*. Dr. W. F. Daniel gives some information about the habit and uses of this plant, which is indigenous in Manchuria. Ph. J. and Tr. iii. 15.

Janipha Manihot, H.B.K. Josiah Cork advocates in the Jamaica Guardian its extensive culture for the preparation of starch. A. J. Ph. ix. 270.

Some information about cassava bread and piawarri, an intoxicating drink made from the root, is published by F. A. Darson. See A. D. Circ. iv. 251.

Euphorbia Lathyris and *Peplus*, Lin. Several cases of poisoning are related in France from these plants. Rép. de Ph. xvii. A. D. Circ. v. 107.

Euph. prostrata, Ait., Span. gallindrinera, swallowwort, is, according to the experiments of Dr. B. J. A. Irwin, U. S. A., a reliable antidote against the bite of the rattlesnake, for which purpose it has long been used by the inhabitants of the Southwestern Territories. See A. D. Circ. v. 107.

Aleurites triloba. An account of the Kukune or Kekui oil, its production and uses, by C. Cook, is found in Lond. Med. Rev. Ph. J. and Tr. ii. 282. A. D. Circ. v. 54.

Buxus sempervirens, Lin. The alkaloid of the leaves discovered by Fauré, is proved by Prof. Walz to be identical with bebeerina; he suggests for this reason that bebeeru bark may probably be the product of a euphorbiaceous tree, instead of Nectandra Rodiei, Schomb. N. Jahrb. f. Ph. xii. 302.

Rottlera tinctoria. G. Leube, jun., has made a new analysis of kamala, for the details of which, refer to Wittst. V. Schr. ix. 321. A. J. Ph. viii. 557.

CELASTRACEÆ.

Euonymus atropurpureus, Lin. W. P. Clothier found in

the bark, gum, starch, sugar, pectin, and 2 resins, one soluble in alcohol, the other soluble in ether; fixed oil, yellow crystals of the bitter principle, trace of volatile oil and extractive. A. J. Ph. ix. 490.

Jno. S. Benzinger obtained starch, albumen, gallic acid, wax, gum, oleoresin, resin, fixed oil, volatile oil, red and yellow coloring matter, bitter extractive, uncrystallizable sugar, pectin, a crystalline principle and inorganic salts. J. Md. Col. Ph. ii. 71.

ERYTHROXYLACEÆ.

Erythroxylon Coca, Lam. Th. Peckolt gives some information regarding the history and culture of this plant in Arch. d Ph. A. J. Ph. ix. 323.

The leaves have been chemically examined by Dr. A. Niemann. See an abstract of his dissertation in A. J. Ph. ix. 122. The most important constituents are the alkaloid cocaina, and a new tannin discovered by him. J. M. Maisch repeated his analysis—see A. J. Ph. ix. 496—and searched without success for a volatile alkaloid, which, like cocaina, he supposed to be a product of decomposition. A volatile alkaloid liquid at ordinary temperature has since been discovered by Lossen; Prof. Woehler named it hygrina. Arch. d. Ph. cx. 15.

A valuable report on the dietetic and medicinal properties of the leaves, with accounts of cases treated by Coca, has been published by Dr. Montegazza. A. D. Circ. iv. 253.

Dr. H. Rossier and A. Vevey have likewise experimented with these leaves, and regard them, in small doses, as a valuable tonic in resisting fatigue, and in larger doses as a narcotic; the pupil is dilated only after very large doses. Echo Méd. Suisse. Rép. de Ph. xvii. 549.

See also an account of their properties in a paper by J. M. Maisch, in Med. and S. Rep. 1861, vi. 399.

Mr. Gosse advocates, and is supported by Bouchardat, the naturalization of the Coca in France. Bull. de la Soc. d'Acclim. Rép. de Ph. xviii. 223.

SIMARUBACEÆ.

Dr. Königsberger regards inoculation with infusion of quassia as a specific against Asiatic cholera. A. D. Circ. v. 225.

RUTACEÆ.

Diosma ambigua, Bartl. and Wendl., (nec Lodd.) Prof. O. Berg describes Hottentot's buchu, consisting of leaves, flowers and fruits of this species. Bonplandia, viii. No. 12. Arch. d. Ph. civ. 232.

Dictamnus albus, Lin. Dr. Hahn has again observed the burning of the air surrounding the pedicels on the approach of a light, a phenomenon once seen by the daughter of Linnæus. Arch. d. Ph. iv. 43. A. D. Circ. v. 83. A. J. Ph. ix. 222.

Ailanthus glandulosa, Desf. Alonzo Lilly, jun., found in the bark starch, tannin, albumen, gum, sugar, oleoresin, and a trace of volatile oil; and in the leaves, the same substances, with pectin and chlorophyl. J. Md. C. Ph. ii. A. J. Ph. ix. 504.

Ptelea trifoliata, Lin. J. M. Smyser found in the bark of the root albumen, gum, starch, volatile oil, fixed oil, and 2 resins; he considers the volatile oil and the resin, which is soluble in alcohol and ether, the medicinally active ingredients. He made also some experiments with the leaves and fruit. A. J. Ph. x. 198.

ZYGOPHYLLACEÆ.

Guaiacum officinale, Lin. Kosmann has found that guaiac resin is a glucoside, splitting with acids into glucose and guaiaretin. J. de Ph. et de Ch. xxxviii. 22.

OXALIDACEÆ.

Oxalis anthelmintica, A. Rich. Dr. Courbon states that this plant is used in Abyssinia as an anthelmintic. Rép. de Ph. xvii. 411.

ROSACEÆ.

Rosa. Landerer treats of the cultivation of roses in Asia minor. Arch. d. Ph. civ. 182.

Brayera anthelmintica, Kunth. C. Bedall obtained from the pedicels acrid resin, tasteless resin, tannin precipitating iron salts green, sugar, starch, oxalic acid, lactic acid, (?) wax, chlorophyll; from the flowers, white acrid resin, (Pavesi's koussin,) gum, ammonia, stearopten, valerianic and acetic acid,

and the former constituents. N. Jahrb. f. Ph. xii. vi. Arch. d. Ph. civ. 301.

Cerasus padus, DeC. Dr. O. Geiseler found in the water distilled from the flowers and leaves, hydrocyanic acid. Arch. d. Ph. cii. 143. A. J. Ph. ix. 217.

Amygdalus communis, Lin., var. *amara*. The volatile oil is freed by J. S. Blockley from hydrocyanic acid by distillation with a little potassa and oxide of mercury. Ch. N. 1861, June 2. A. J. Ph. ix. 435.

Cratægus coccinea, Lin. The young twigs and bark were found to be a reliable diaphoretic, by Dr. R. M. Reynolds. Ph. E. J. A. D. Circ. v. 171.

LEGUMINOSÆ.

Trifolium pratense, Lin. Common clover hay, Trifolium in fœno, is according, to Dr. Foster, of Huntingdon, England, a good remedy in whooping cough. Med. Times and Gaz. A. D. Circ. v. 221.

Bowdichia major, Mart. Th. Peckolt has analysed the gum Sicopira; it contains 4 per ct. resin, 3 tannin, 44 insoluble gelatinous matter. The bark was formerly much used in Brazil. Arch. d. Ph. cix. 36.

Albizzia anthelmintica is the name adopted by Dr. Courbon, for the Abyssinian plant, Mesenna or Besenna, which he proves is not derived, as was supposed by A. Roche, from Juniperus Virginiana, Lin., (J. procera, Rich.) Rép. de Ph. xvii. 411.

Myrocarpus fastigiatus. Th. Peckolt notices this tree and the uses of its parts. The wood treated with ether yields a resin which he uses in place of tolu. Arch. d. Ph. ciii. 309.

Myrospermum Peruiferum, DeC. Dan. Hanbury publishes a bull of Pius V., showing the high repute in which Balsam of Peru was at one time held by the Catholic church. Ph. J. and T., 1861, March. A. J. Ph. ix. 262.

Dr. Theod. Martius has made some remarks in N. Rep. d. Ph. x. 195, on Dr. Charles Dorat's statements regarding the production of Balsam of Peru, which were published in A. J. Ph. viii. 302.

Copaifera. Dr. Ricord combines copaiva with tar, which

seems to prevent some of its unpleasant effects. A. D. Circ. v. 219. See also "Pills."

Distilled water of copaiva has been found by Dr. Langlebert of good service as injections in gonorrhœa. Gaz. des Hôp. A. J. Ph. ix. 413. A. D. Circ. v. 151.

Copaiba adulterated with turpentine was examined by Réveil; it was solidified by magnesia and ammonia, and nearly completely soluble in absolute alcohol. Genuine copaiba is either not affected by ammonia, or it yields (Para copaiba) an emulsion *of little consistence*. Rép. de Ph. xviii. 448.

Anacahuite Wood was imported into Europe, from Mexico, as a specific for consumption. Prof. O. Berg, (Bonplandia, viii. 302,) from the microscopical examination of the structure of this wood, shows that it is probably derived from a papilionaceous tree. See papers on this subject by J. M. Maisch, in A. J. Ph. ix. 107; by Dan. Hanbury in Ph. J. and Tr. ii. 407, and by Becthold Seemann, ibid iii. 164.

The proximate analysis has shown no active constituents, unless it be the large quantity of oxalate of lime. Compare the analysis of Prof. A. Buchner in N. Repert. x. 97, A. J. Ph. ix. 321; by Dr. L. Müller in Wittst. V. Schr. x. 519. A. J. Ph. x. 327, and the analysis in Arch. d. Ph. cvii. 176. A. J. Ph. x. 34.

Baptisia tinctoria, Lin. B. L. Smedley analysed the root and found albumen, starch, resin, crystalline principle, (alkaloid?) A. J. Ph. x. 310.

Glycyrrhiza glabra, Lin. H. J. Versmann found Sicily liquorice adulterated with the extract of *Triticum repens*, Lin.

Cassia. Prof. Bentley directs attention to the again frequent adulteration of senna leaves with the leaves and flowers of Cynanchum argel, with leaves and pods of Thephrosia Appolinea, with stones and dust. Ph. J. and Tr. ii. 496.

ANACARDIACEÆ.

Pistacia lentiscus, Lin. An account of the collection and uses of Mastic, at Chios, will be found in Echo Méd. Suisse. Ph. J. and Tr., 1861, Nov. A. J. Ph. ix. 61.

P. terebinthus and *lentiscus*, Lin., have very astringent

leaves; upon the recommendation of Prof. X. Landerer, they have been made use of for tanning. Hirzel's Zeitschr. xii. 135.

CUPULIFERÆ.

Quercus heterophylla, Mich., Bartram's Oak, is considered by S. B. Buckley a mere variety of *Qu. phellos*, Lin., and not a hybrid, as was supposed by some botanists. A. J. Ph. x. 122.

URTICACEÆ.

Humulus lupulus, Lin. R. Wagner concludes from his researches, that the tannin of hops is allied to, if not identical with, morinotannic acid, and that its yellow coloring matter is probably quercitrin. N. Jahrb. f. Ph. xii. 368. Arch. d. Ph. civ. 301.

Dr. F. Winkler discovered a new volatile acid, resembling valerianic acid. N. Jahrb. f. Ph. xvi. 134. A. J. Ph. x. 381.

Ficus elastica, Roxb. The juice is composed, according to Dr. Adriani, of water 82.30, caoutchouc 9.47, resin 158, magnesia, with an organic acid, 4.49, sugar 0.36, dextrin (?) with traces of lime and soda, 2.18. Ch. N. ii. 289.

Ficus rubiginosa, of Australia, contains in the juice, according to Warren de la Rue and Hugo Müller, an amorphous resin sycoretine, and the acetate of a new organic ether, the oxide of sycoceryle, whose alcohol is homologous with benzalcohol. Proc. Roy. Soc. x. 298.

Ficus sylvestris, St. Hil., and *F. doliaria*, Mart. A paper by Th. Peckolt, on the milky juice of these species, in Arch. d. Ph. cv. 31.

Ficus Carica, Lin. The juice of unripe figs is extremely caustic; still, according to Landerer, the small figs collected in March are used as preserves. Arch. d. Ph. ci. 299. A. J. Ph. ix. 215.

Cannabis sativa, Lin., var. *indica*. Hashish has, according to Wiener Med. Woschenschr., been successfully used for the cure of intermittent fever. Rép. de Ph. xvii. 113.

Dr. Guyon gives some information on the use of Hashish in Arabia and the Levante, and records two cases of poisoning by

hempseed, which occurred in the neighborhood of Chamberry, France. Jaf. Méd. de Paris. N. Repert. d. Ph. x. 384.

Dr. Fronmüller, of Fürth, relates in a paper the production of Hashish, its medicinal uses with his own observations, and gives the results of the incomplete analyses heretofore made. Prager V. Schr. xvii. Ph. J. and Tr. ii. 225. See also A. D. Circ. iv. 343.

MYRICACEÆ.

Myrica cerifera, Lin. Gid. E. Moore examined the wax obtained from the wax myrtle, and found it to consist of one-fifth palmitin and four-fifths palmitic acid, with a little lauric acid. It is well adapted for the preparation of pure palmitic acid. A. J. Sc. and A., 1862, May. A. J. Ph. x. 337.

PIPERACEÆ.

Piper angustifolium, Ruiz and Pavon. The essential oil of matico pure and combined with copaiva has been used internally and externally in blennorhœa. L'union méd. A. M. Times, iii. 124. A. D. Circ. v. 150.

Piper nigrum, Lin. Evans has examined under the microscope the structure of pepper with the view of detecting by this means its adulteration with starches, mustard husks, linseed and the pods and seeds of capsicum. Ph. J. and Tr. A. D. Circ. v. 287.

P. methysticum, Forst. Kawa root contains according to Gobley, 15 water, 26 lignin, 49 starch, 1 methysticine, 2 resin, 3 gum and extractive, 4 mineral constituents. Methysticine is probably an alkaloid. J. de Ph. et de Chim. xxxvii 19.

LAURACEÆ.

Camphora officinarum, Nees. An ethereal solution of camphor is used as a local anæsthetic by A. Claisse and applied with a probang. Rev. méd. franc. et étr. A. D. Circ. vi. 171.

We believe this solution has been used for some time for the purpose indicated; we know it to be the case with a solution of camphor in chloroform.

Dumont detects artificial camphor in camphor, by treating the alcoholic solution with ammonia, which with the former produces

floccules gradually increasing in volume. A. D. Circ. A J. Ph. xi. 189.

ARISTOLOCHIACEÆ.

Asarum europæum, Lin., is recommended by Dr. Smirnoff as a remedy against the effects of excessive indulgence in liquors. Med. Zeitschr. Russl. A. D. Circ. v. 151.

AMARANTACEÆ.

Amarantus (*species?*) L'union Méd. relates the poisoning of four girls who partook of the roots of common amaranth which they mistook for carots. Rép. de Ph. xviii. 477.

CHENOPODIACEÆ.

Chenopodium Quinoa. In a paper on coca and its uses, Dr. Th. Martius states that after many unsuccessful attempts, this plant is at last cultivated in France by M. Vilmorin. The leaves are used as a potherb, the fruit as a substitute for rice. N. Repert. x. 433.

Beta vulgaris, Lin. Dr. Stemmer has proved by experiments that the quantity of sugar increases in beet roots up to the time of flowering. The apex of the beet contains a trifle less sugar than the lower portions. Arch. d. Ph. civ. 239.

ERICACEÆ.

Gaultheria procumbens, L. Dr. W. E. Townsend records a case of poisoning of a woman from drinking six ounces of essence (alcoholic solution of the oil?) of checkerberry; the patient recovered. Dr. Hooker mentions a similar case resulting in a severe attack of gastritis. Bost. M. and S. J. A. D. Circ. vi. 26.

Arbutus Unedo, Lin., strawberry tree. Filhol found in the fruit fruitsugar, parapectin, wax, coloring matter, metapectic acid and traces of starch. Rép. de Ph. A. D. Circ. iv. 279.

Arctostaphylos Uva ursi, Spreng. Dr. A. Gauchet considers uva ursi of advantage in certain cases of tedious labor. Bull. gén. de Thér. A. D. Circ. v. 87.

Vaccinium myrtillus, L. Siebert has obtained kinic acid

from the European huckleberry plant. His process is described in Ann. d. Ch. and Ph. cxv. 108. A. J. Ph. ix. 128. A. D. Circ. iv. 321.

SAPOTACEÆ.

Isonandra Gutta, Hook. E. H. Von Baumhauer states that this tree grows 70 to 100 feet high, and yields from incisions its juice, which after exposure to the air becomes thick and brown. The lazy natives obtain the gutta percha by felling the tree, making incisions near the summit, and by boiling the chopped wood. Gutta percha is a camphene $C_{20}H_{16}$, and contains several oxides of it. J. f. pr. Ch. lxxviii. 277. Professor Hofmann arrived at similar results. Quart. J. Chem. Soc. See A. D. Circ. iv. 319. A. J. Ph. ix. 407.

STYRACEÆ.

Styrax Benzoin, Dryand. Hermann Aschoff found in Sumatra benzoin, cinnamic acid; other kinds contain no trace of it. His mode of proving the presence of this acid depends on the formation of oil of bitter almonds by oxidizing agents. Archiv d. Ph. cvii. 155. A. J. Ph. x. 34.

Kolbe and Lautemann announced previously (Ann. d. Ch. und Ph. A. J. Ph. ix. 220,) the existence in benzoin of an acid different from benzoin, and found in Sumatra benzoin a mixture of 2 equiv. of this with 1 equiv. of cinnamic acid. A. J. Ph. x. 84.

AQUIFOLIACEÆ.

John Miers has received from Bonpland authentic specimens accompanied with notes of all species used for preparing the yerba de maté or Paraguay tea. They are *Ilex paraguaiensis*, St. Hil., *I. curitibensis*, Miers, *I. gigantea*, Bonp., *I. amara*, Bonp., *I. Humboldtiana*, Bonp., I. ovalifolia, Bonp., I. nigropunctata, M. I. acutangula, Neuw. Rép. de Ph. xviii. 452.

Rammelsberg obtained 0·44 per ct. thein by extracting Paraguay tea with benzole. Bericht d. Akad. zu Berl. 1861, 263. Ch. N. iv. 111.

See D. Stahlschmidt's paper in Poggendorf's Ann. cxii. 441. A. J. Ph. x. 86.

CONVOLVULACEÆ.

Ipomœa operculata, Mart. Th. Peckolt has made a chemical examination of the tubers which have long been known under the name of Brazilian jalap, radix jalapæ brasilianæ, (Wiggers, in Canst. Jahr. f. 1860, 337,) and which the Brazilians call Batata da purga. Archiv d. Ph. ciii. 316.

I. jalapa, Nutt. Jno. C. Long concludes from his experiments that the aqueous extract is entirely inert, and that the activity depends upon the hard and soft resin. A. J. Ph. ix. 487.

The alcoholic extract yielding resin only to ether, but not to alcohol, it seems not improbable that the author used the tubers of I. orizabensis, Pell.

J. Franck notices a commercial jalap, consisting in part of tubers deprived of their resin. N. Jahrb. f. Ph. xvi. 83. J. M. Maisch has noticed the same sophistication in the American commerce. A. J. Ph. x. 330.

A spurious extract of jalap was found by Ch. Bullock to contain as the purgative principle 34 per ct. resin of gamboge. A. J. Ph. x. 24. A. D. Circ. vi.

Convolvulus Scammonia, Lin. In a paper on the preparation of scammony, Landerer states that it is mixed with the aqueous extract to serve as a diluent rather than an adulteration. Arch. d. Ph. ci. 300, A. J. Ph. ix. 216.

J. Franck found scammony to be largely adulterated with the meal of leguminous seed. N. Jahrb. f. Ph. xvi. 84. A. J. Ph. x. 330.

RUBIACEÆ.

Cinchona. Several species have been introduced and are now, after great exertions and perseverance, cultivated with decided success in India and Java. A report on the culture in the East Indies, will be found in Ph. J. and Tr. ii. 201. A. J. Ph. ix. 33. A. D. Circ. v. 6. Prof. de Vrij publishes an account of the success attending the culture in Java, in J. de Ph. et de Chim. A. J. Ph. ix. 47, and x. 288. A. D. Circ. v. 6; also Junghuhn in Bonplandia, viii. 206, 227, 254.

Karsten furnishes reliable information on the cinchonas of

New Granada in Ber. der Berl. Akad. A. J. Ph. ix. 113; and gives the botanical history of the known and by him newly discovered species of that country, including other rubiaceous trees nearly allied to the former, in his splendid work, Flora Columbiæ, &c. I. An abstract in Canstatt's Jahresb. für 1860, 35.

Prof. O. Berg mentions in his work on the officinal plants 54 species of cinchona, and describes the barks under three general heads, namely, as 1, grey or brown; 2, yellow; and 3, red barks; see Canst. J. f. 1860, 36, 39.

According to Dr. Armand, the Chinese are not acquainted with the use of cinchona bark, but they employ several other plants of the same natural order for the cure of intermittent fever. Rép. de Ph. xvii. 519.

Rabourdin assays cinchona bark by exhausting 10 grm. with muriatic acid, precipitating with excess of soda, redissolving in muriatic acid and removing the little coloring matter (chinoidine?) by fractional precipitation with ammonia, before precipitating the alkaloid. J. de Ph. and de Chim. and A. D. Circ. v. 22.

O. Hesse found the lignoine of Reichel, obtained from Huanuco bark, after it is freed from ammonia, to have the composition $C_{40}H_{20}O_{16}$, which is the composition of the kinovic acid of Hlasiwetz. Ann d. Ch. and Ph. cix. A. J. Ph. ix. 171.

Arariba rubra, Mart. Rieth found in this Brazilian tree a new alkaloid which he calls aribina; its composition is $C_{46}H_{20}N$, and it is the first natural solid alkaloid of ternary composition known; its taste is very bitter. Rép. de Ph. xviii. 463.

Bicolorata bark. See a notice of the same, which is now not met with in commerce, by Prof. E. E. Phelps in Bost. M. and S. Journ. A. D. Circ. v. 82.

Coffea arabica, Lin. Zwenger and Siebert have prepared kinic acid from the coffee fruit, and have proved its identity by analysis of the acid and its salts. Ann. d. Ch. and Ph. Suppl. i. 77.

Cephaelis Ipecacuanha, Rich. A paper on the pathogeny and therapeutics of ipecac, is now published by Dr. E. Sanford, of Attleborough.

Rubia tinctorum, Lin. F. A. Nautz has contributed a practical paper on madder, its cultivation, uses, manipulations and preparation for the market. Working Farmer. A. D. Circ. v. 32.

CAPRIFOLIACEÆ.

Sambucus. Speer, of Passaic, N. J., prepares elderberry wine of superior quality, which requires 4 years for maturation, to be ready for the market in any climate. The berries are stated to be of a stock imported from Portugal, and frequently of the size of grapes. M. and S. Rep. A. D. Circ. v. 170.

They are most likely the berries of S. nigra, Lin.

Samb. Ebulus, Lin. The root contains according to Enz, valerianic, acetic and tannic acids, fat, acid and bitter principle, saponin, resin, starch, sugar, gum, albumen and traces of a volatile oil. Witts. V. Schr. ix. 15.

COMPOSITÆ.

Eupatorium cannabinum, Lin., is stated to have been used with success by Dr. Van Dromme in Asiatic cholera. Presse Méd. A. M. Monthly xvii. 267.

It will be remembered that more than 30 years ago, Mikania guaco H. and Bonp. was reputed a specific against this disease. Botanically, the European Eup. cannab. is very nearly allied to it. We would suggest that some of the numerous species of Eupatorium indigenous in the United States be tried, as well as the Mikania scandens, Willd., which is common in some places, and to judge from its odor and taste, probably possesses properties similar to the Eupatoria.

Mikania Guaco, Humb. and B., has of late been again recommended by W. E. W. Pritshard as a remedy for gout, who cites also the experience of others. See Ph. J. and Tr. iii. 238.

Tussilago Farfara, Lin., was analyzed by Jno. G. Nagle, who found gum, albumen, inulin, gallic acid, pectin, extractive bitter resin, fixed oil, wax, sugar, green and yellow coloring matter and lignin. J. Md. Col. Ph. ii. 73.

Anthemis nobilis, Lin. Pattori has separated an acid, anthemic acid, and a base anthemia from chamomile flowers. The

latter is in inodorous and tasteless crystals of alkaline reaction, very sparingly soluble in cold water, insoluble in alcohol and ether, freely soluble in acetic acid. No elementary analysis. Jiorn. di. Ph. Arch. d. Ph. cii. 334.

Maruta Cotula, DeC., is, according to the Journ. de Ph. d'Anvers a valuable surrogate for the Persian insect powder; bedbugs, fleas, flies, &c., are killed by the flowers, ants are not affected. N. J. f. Ph. xvii. 249.

This plant has become a troublesome weed in some parts of the United States; if the above statement is borne out by facts, it will eventually become valuable. It would be well if other plants botanically allied to it, were experimented with, for instance Leucanthemum vulgare, Lam., likewise an introduced plant and just as troublesome as the former.

Matricaria Chamomila, Lin. The essential oil is composed according to Bizia of 5 $C_{20},H_{16},6HO$. Rép. de Chim. Ph. J. and Tr. iii. 429.

Pyrethrum. Schlotshauber found the Persian insect powder to contain a variety of *Pyr. corymbosum*, W., *Pyr. tenuifolium*, Tenore, and a variety of *Anthemis arvensis*., Lin.

Gieseler states that the heads of *Anthemis nobilis*, *Achillea nobilis*, *Pyrethrum Tanacetum*, *Pyr. Calamita*, *Matricaria Chamomila*, &c. exert a similar effect upon insects. Cannst. Jahrb. c. 1860, 30.

f *Pyrethrum roseum* and *carneum*. Jos. Abel gives some information about the Persian Insect powder, and the successful culture of the plants in the United States. A. J. Ph. viii. 520. See notices above.

Artemisia Santonica, Lin. Dr. Rose, in speaking of Levant wormseed, states that the volatile oil has no vermifuge properties; santonate of soda may prove poisonous in consequence of its rapid absorption. Arch. f. pathol. Anat. A. D. Circ. v. 151.

Arnica montana, Lin. Prof. G. J. Walz obtained the bitter principle, arnicine, $C_{70}H_{54}O_{14}$, a yellow volatile oil, two resins, one soluble, the other insoluble in ether, tannin, yellow coloring matter, fat and waxy matters. N. J. f. Ph. xiv. 79. A. J. Ph. ix. 450.

Timbal Lagrave relates the substitution of arnica flowers by the much smaller flowers of Senecio doronicum, Lin. Rép. de Ph. xviii. 457.

Achillea millefolium, Lin., was analyzed by Ch. C. Sears who obtained volatile oil, tannin, resin, albumen, yellow coloring matter, starch, gum, bitter extractive, chlorophyll. J. Md. Col. Ph. ii. 74.

Emilia rigidula, DeC. Dr. Sacc states that it is employed in Guiana as a tonic and antichlorotic. Rép. de Ph. xvii. 256.

Dr. Michely, of Cayenne, has used it for similar purposes: the plant is used as a salad, and in the form of tea, prepared from the flowering tops. A. D. Circ. v. 107.

Cichorium Intybus, Lin. The root, it is known, is used for adulterating and in place of coffee. English chicory is inferior to the continental. It occurs adulterated with Venetian red, logwood dust, coffee husks, &c. The substance sold as taraxacum coffee is asserted to be made from English succory. Ph. J. and Tr. A. D. Circ. iv. 297.

The numerous so-called essences of coffee of our market deserve a careful and minute examination.

Lactuca sativa, Lin. Malenfant gives directions for obtaining a reliable thridaceum, thridax, or French lactucarium; the juice of the leaves and upper stem is heated, the filtrate distilled to one third, after cooling decanted and rapidly evaporated at a moderate heat. J. de Ph. et de Chim. xxxviii. 96. Canst. Jahresb. f. 1860, 31.

VALERIANACEÆ.

Valeriana officinalis, Lin. See a paper entitled "therapeutic studies on essence of valerian," by Barailles in Rép. de Ph. A. J. Ph. ix. 239. A. D. Circ. v. 35, 131.

Mayer, of Heilbronn states that the oil of valerian costs more to prepare, than the prices asked by the best drug houses, and that it is likely to be always adulterated. N. Jahrb. d. Ph. xvi. 21. A. J. Ph. x. 329.

GLOBULARIACEÆ.

Globularia Alypum, Lin. The leaves are, according to Dr. Planchon, a mild and reliable purgative, producing no pains, nau-

sea or subsequent constipation. See a full account in a pamphlet: Des globulaires au point de vue botan. et méd. Ph. J. and Tr. i. 413.

The purgative properties of this plant were well known centuries ago.

The leaves contain a bitter glucoside, globularin $C_{60}H_{44}O_{28}$, globularetin, paraglobularetin, yellow coloring matter and tannin. N. Jahrb. f. Ph. xiii. 288. Ch. N. iii. 128.

LABIATÆ.

Glechoma hederacea, Lin. J. B. Enz observed in the ethereal tincture tannin, acetic acid, salts of potassa and lime, wax, fixed oil, chlorophyll, acrid and a bitterish matter; alcohol took up now fermentable sugar, tannin, lime and potassa salts, acid bitter resin and coloring matter; water dissolved albumen, gum, tartaric, muriatic, sulphuric, phosphoric, nitric acids combined with potassa, lime and magnesia. The bitter principle is dissolved by water from the alcoholic extract, and separated by chloroform. Witts. V. Sch. x. 11.

Mentha. A so-called solid oil of mint, was found by Gorup-Besanez to be the stearopten of mint, rendered crystalline by 13.66 per cent. sulphate of magnesia. Ann. d. Ch. und Ph. cxix. 245. A. J. Ph. x. 32.

BIGNONIACEÆ.

Millingtonia hortensis, Lin. Dr. Hollands describes this bark, which is used in Java as a febrifuge; he found it to contain wax, a trace of fixed oil, coloring matter, sugar, gum or dextrine, resin, chlorophyll, tannin, pectin, oxalate of lime; the anhydrous bark yielded 10 per cent. ashes. Witts. V. Schr. x. 321. A. J. Ph. ix. 508.

PEDALIACEÆ.

Sesamum Indicum, DeC. Roth, of Mulhouse, recommends the oil as a substitute for olive oil, &c., and well adapted for external use. L'Union Ph. 1861. A. D. C. v. 225.

SCROPHULARIACEÆ.

Digitalis purpurea, Lin. It has been employed with advan-

tage by Dr. A. Hadden, in puerperal fever. A. M. T. A. D. Circ. v. 10.

Dr. G. M. Jones obtained beneficial results from the tincture in half-ounce doses, repeated three times within ten hours, in delirium tremens. Dr. T. H. Baker believes the tincture to possess the lowest degree of toxical power of all the preparations of digitalis. A. M. T. A. D. Circ. v. 130. Trousseau uses the infusion, ℥i. to Oij. in menorrhagia, in tablespoonful doses. Gaz. des Hôp. A. D. Circ. v. 135.

Verbascum Thapsus, Lin., is recommended by Dr. H. Wilson to be smoked as a palliative and curative in chronic bronchitis. M. & S. Rep. A. D. Circ. v. 35.

SOLANACEÆ.

Hyoscyamus niger, Lin. Dr. Donovan took the tincture in doses of one ounce, without observing any remarkable effects. See his and Dr. Forsayeth's papers in Dubl. M. Pr., and Ph. J. & Tr. iii. 618, iv. 38.

Scopolia mutica, Dunal. Prof. D. Schroff has experimented with the taftroot from Persia, and declares it to be derived from this plant, but considers it probable that Hyosc. bipinnatisectus, Boiss., may furnish some. N. Rep. x. 364, and a short abstract in A. J. Ph. x. 334.

Atropa Belladonna, Lin. Dr. C. S. Shelton speaks highly of the use of extract of belladonna with sulphate of zinc in small doses, in whooping cough. A. M. T. A. D. Circ. v. 185. Prof. Pitha, of Vienna, succeeded in producing a profound sleep of twelve hours' duration, by employing extract of belladonna as an embrocation to the abdomen, and injection into the rectum, after chloroform and ether had failed as anæsthetics. Wien. Wochenschr. 1861, N. 25. A. D. Circ. v. 207.

Belladonna leaves are frequently imported from Germany in a very impure state. See a paper detailing the result of examination of several parcels, by J. M. Maisch, in A. J. Ph. x. 123.

Solanum pseudo-capsicum, Lin. Montané relates a case of poisoning of a child by the berries of this shrub. Rép. de Ph. xviii. 75.

The shrub being cultivated in the United States for ornamental purposes, this case must be regarded as a warning.

A fatal case of poisoning is also recorded by the berries of *Solanum dulcamara*, Lin. in Rép. de Ph. xvii. 254, and two cases, one of which resulted in death, by D. Magne, from the leaves of *Solanum nigrum*, Lin. Journ. de Chim. Méd.

Greek tobacco (from *Nicotiana rustica*, Lin.?) produces a smoke which is free from HS and HCy. The empyreumatic liquid, separated in the pipes, is popularly employed in Greece in exanthematous complaints. Arch. d. Ph. ciii. 29. A. J. Ph. ix. 313.

Nic. Tabacum, Lin. Tobacco will burn freely if sufficiently supplied with organic salts of potassa. Cpt. rend. A. D. Circ. iv. 341.

Dr. Hollifield in the Georgia M. & S. Encyc. discourages the use of tobacco as injurious to the health. Dent. Cosm. ii. 50. Dr. C. Warren does not regard tobacco as preserving the teeth, but believes it frequently causes ulcerated cancer of the mouth. Dent. Cosm. iii. 116.

Dr. W. D. Johnson, of Hernando, Miss., reports in the N. O. M. & S. J., 1860, his experiments with tobacco and alcohol as efficacious antidotes to snake bites. J. of Mat. Med. ii. 354.

Crescentia edulis, Desf. The fruit with the seeds, made into a syrup, is the new remedy for consumption, coming from Tampico, Mexico, under the name of Tima. Prof. Walz analyzed the fruit and found butyric, acetic, tartaric and malic acids, resin, sugar, gum, pectin, humin and lignin. N. Jahrb. f. Ph. xv. 426. A. J. Ph. x. 37.

GENTIANACEÆ.

Gentiana. Dr. Th. Martius has an interesting paper on the collection of gentian in Southern Bavaria. The roots of *G. pannonica*, Scop., and *G. punctata*, Lin., are alone collected for commerce. Both roots are described in the fresh and dried state, and the microscopical examination of both, by Prof. Schnizlein is given. A well executed plate of sections of the roots accompanies the essay. N. Jahrb. f. Ph. xvii. 194.

Frasera Walteri, Mich. An analysis by N. R. Higinbotham, has developed nothing of interest. A. J. Ph. x. 23.

APOCYNACEÆ.

Urari Curare. The question whether the alkaloid contained

in South American arrow-poison is strychnia, appears to be satisfactorily decided in the negative. Prof. Henkel, in N. Repert. x. 164, and Prof. Buchner, ibid, 167, relate their observations, and conclude that the alkaloid curaria shows very similar, but not identical reactions with those of strychnia. Prof. Liebig was likewise unable to obtain strychnia.

Various new physiological experiments with urari and the alkaloid shows its action to be quite opposite to that of strychnia, and Dr. Vella, Cpt. rend. lx., regards it as a sovereign remedy in tetanus, and almost an antidote to the poisonous effects of strychnia. See A. D. Circ. iv. 339.

Nux vomica. From J. M. Maisch's analysis of a powder which was obtained in the attempt to prepare strychnia without employing alcohol, it seems likely that nux vomica contains phosphate of alumina and of magnesia. A. J. Ph. viii. 524.

Latour bark, employed in dying in the East, is supposed by X. Landerer to be the bark of Strychnos nux vomica, Lin., which the surgeons of the French African army employ under the name of cortex simarubæ. Witts. V. Sch. x. 219. A. J. Ph. ix. 409.

Nerium Oleander, Lin., when wounded, yields a gum resin which, according to Landerer, is a powerful drastic in the dose of 3 grs. given in alcoholic solution. A. D. Circ. vi. 23.

ASCLEPIADACEÆ.

Asclepias Syriaca, Lin. Piroschkoff and Hartmann, of Kiew, prepare the fibres of the liber of this plant so as to resemble cotton fibres, and propose to cultivate it on the large scale. See a notice of Basiner's paper in A. J. Ph. ix. 320.

Ascl. tuberosa, Lin. Elam Rhoads found in the root tannin, gallic acid, albumen, starch, gum, two resins, fixed oil, coloring matter, volatile odorous principle, extractive. A. J. Ph. ix. 492.

LORANTHACEÆ.

Viscum album, Lin. Reinsch has subjected this plant to a microscopical and chemical analysis; the latter yielded him viscine, resins, arabin, sugar, tannin, viscaoutchin, soluble and insoluble albumen, chlorophyll, parapectin. N. Jahrb. d. Ph. xiv. 129.

OLEACEÆ.

Olea Europæa, Lin. X. Landerer strongly recommends the leaves and the unripe fruit of the olive tree as an old and reliable febrifuge. Hirzel's Zeits. f. Ph. xii. 168.

Faucher has prepared a tincture and a hydro-alcoholic extract of the fresh leaves, and reports on the successful treatment by several physicians, of diseases of an intermittent character. See A. D. Circ. iv. 338.

Phillyrea latifolia, Lin. DeLuca, Bertagnini, and Carboucelli, have further experimented with phillyrin, which is a glucoside splitting under the influence of acids into phillygenin and glucose. J. de Ph. et de Ch. xxxviii. 356. A. D. Circ. iv. 315.

The bark of this tree is likewise used as an antiperiodic.

Ligustrum vulgare, Lin. The leaves contain mannite separated by A. Kromayer, and found as early as 1838, by Polex. Arch. d. Ph. ci. 281.

Ornus Europæa, Pers. See an essay on manna and mannite, by Dr. Reinhard Backhaus, in Buchn. N. Rep. ix. 289. A. J. Ph. ix. 26.

A. Frickhinger found a manna canellata adulterated with 8 to 12 pr. ct. bread crumbs. Witts. V. Schr. x. 69.

CONIFERÆ.

Oleum terebinthinæ, was used as an anæsthetic by Dr. J. Williamhurst. Lancet, 1861, March 2. A. D. Circ. v. 129.

Pinus Pumilio, Haenke. The volatile oil was analyzed by H. Milotrasch. N. Rep. d. Ph. ix. 337. A. J. Ph. ix. 454.

Picea vulgaris, Link. Laneau has met with a Burgundy pitch adulterated with 20 pr. ct. of gypsum. J. de Ph. et de Chim. xxxviii. 171. Drugg. ii. 138.

Juniperus oxycedrus, Lin. The empyreumatic oil, oleum cadinum, is used in skin diseases. Hirz. Zeits. xii. 89. A. J. Ph. ix. 110.

ZINGIBERACEÆ.

Zingiber officinale, Rosc. Horsley finds the starch granules of soft ginger of a long lozenge form, and assuming a blue color with iodine, while in the dry state they are of various shapes, and

turn with iodine of a sepia color, with 6 or 7 bands. Ch. N. ii. 96. A. D. Circ. iv. 279.

ORCHIDACEÆ.

Salep. C. W. Barnickel, of Remlingen, prepares an excellent salep from various species of orchis. N. Rep. d. Ph. x. 134. A. J. Ph. ix. 404.

MELANTHACEÆ.

Veratrum viride, Ait., is recommended by Dr. A. A. Davidson in pneumonia, pleurisy and other inflammatory diseases. Nashv. J. of Med. and Surg. A. D. Circ. iv. 343.

Ver. album, Lin. Holland, jun., has analyzed a proprietory medicine heralded as efficacious in removing freckles; it is a tincture made from 1 part of this root to 4 parts alcohol. Archiv d. Ph. A. D. Circ. v. 223.

Prof. Schroff has furnished a minute description of the rhizoma and rootlets of this plant in the fresh state; his physiological experiments prove that the radicles possess more activity than the rhizoma, but that the latter contains another active principle (jervia ?) which is not contained in the former. Prof. Wiggers suggests to employ the rootlets for the preparation of veratria. Canst. Jahr. f. 1860. 18

Ver. nigrum, Lin. Prof. Schroff arrived at the same results for the rhizoma and rootlets of this plant. Ibid, 21.

LILIACEÆ.

Scilla maritima, Lin. Mendet claims to have separated two active principles from squills: skuleine, which is poisonous, and scillitine, possessing the diuretic and expectorant properties. No process is given. Cpt. rend. li. 88. Ch. N. ii. 95. A. D. Circ. iv. 279.

Aloe. R. W. Giles arrives at the conclusion that Barbadoes is superior in its effects to Socotrine aloes. Ph. J. and Tr. iii. 301. A. J. Ph. ix. 137. A. D. Circ. v. 32.

An alcoholic tincture of aloes was employed by D. Gamberini with advantage in blennorrhœa in the form of injections. Gaz. med. ital. Lomb. Rép. de Ph. xvii. 158.

The composition of aloes is according to Dr. C. Kosmann, of

Thann, as follows: two electronegative resins, which are acids of different strengths and combined with a carbohydrate; they yield glucose under the influence of strong acids and alkalies. J. de Ph. et de Chim. xxxiv. 177. See Ph. J. and Tr. iii. 268.

Polygonatum multiflorum, Lin. The fresh root scraped and applied to the eye is stated to be a good remedy in ecchymosis. A. D. Circ. A. J. Ph. ii. 336.

SMILACEÆ.

Sarsaparilla. Versmann examined Honduras sarsaparilla for iodine, and found it entirely free from it. Arch. d. Ph. civ. A. J. Ph. ix. 315.

Prof. Sigmund, of Vienna, states as the results of his investigations, that sarsaparilla exerts no material change in gonorrhœa and syphilis, and that the activity of preparations containing it as one of their constituents, cannot be referred to it. He advises to abandon its use. Zeits. d. Ges. d. Aerzte. A. D. C. iv. 813. M. and S. Rep. vii. 546.

Paris quadrifolia, Lin. Prof. Walz has further examined this plant, the interesting constituents of which are paridin $C_{64}H_{56}O_{28}$, and paristyphain, $C_{76}H_{128}O_{36}$, both glucosides, the latter yielding the former on being treated with acids. N. Jahrb. f. Ph. xiii. 174, 166. Ch. N. iii. 128.

ARACEÆ.

Arum maculatum, Lin. A fatal case of poisoning is reported by Dr. Cangella, of a child who had partaken of the corms and flowers of this plant. Gaz. Med. da Porto. Rép. de Ph. xvii. 259, 394.

JUNCACEÆ.

Scorzonera hispanica, Lin. Dr. Witting isolated mannite from the root of this plant. Arch. der Ph. civ. 286. A. J. Ph. ix. 318.

GRAMINACEÆ.

Triticum repens, Lin. Dr. H. Thompson highly recommends the infusion of the rhizoma in irritable conditions of the bladder; he directs it to be gathered in spring before the appearance of the leaves. Lond. Lanc. 1862. i. 26. A. D. Circ. vi. 26.

This plant yields the Radix graminis of the European pharmacopœias.

Zea Mays, Lin. Steff found in the grains 10·6 water, 6·70 nitrogenated matter (gluten, so-called zeine), 3·8 fat, 3·05 gum, 3·61 sugar, 0·62 albumen, 61.82 starch, with cellulose. Air-dry maize contains 2·4 per cent. nitrogen, of which 1·045 are from the gluten and 1·355 from a substance insoluble in alcohol. J. f. pr. Ch. lxxvi. 88.

FILICES.

Nephrodium Filix mas, Rich. Dr. E. Hallier of Jena publishes comparative descriptions of the rootstocks of male fern and the following species with which it is likely to be confounded: *Neph. areopteris*, Roep., *N. spinulosum*, Stræpel, *Asplenium filix fœmina*, Bornh. and *Struthiopteris germanica*, Willd. Kühtze's Not. xxv. 131.

Aspidium athamanticum, Kunze, yields probably panna root of Port Natal, South Africa. Dr. Behrens had extolled it as a remedy for taenia, which is denied by Dr. Küchenmeister, who finds it inferior to pomegranate root. See Drugg. ii. 138.

Cibotium Cumingii, *&c.* Dr. Vincke has experimented with a Pengharwar zambie, which Prof. Wiggers (Canst. Jahresbericht f. 1860, 15) suggests was probably the Pakœ-kidang of Java from *Alsophila lucida*, *Chnoophora tomentosa* and *Balantium chrysotrichum*. The hemostatic action is very rapid and occurs by the absorption of the liquid and the separation of the suspended matter. Med. Zeit. Russ. 1859. See A. J. Ph. ix. 54.

Compare also Cooke's lecture on this subject in Ph. J. and Tr. i. 501.

LYCOPODIACEÆ.

Lycopodium clavatum, Lin. H. Dupont has found in commercial lycopodium, 25 to 30 per cent. leiocome which is readily detected by an alkaline solution of copper being reduced with the aqueous infusion. J. de Méd. de Brux. 1860, Juill.

J. Franck observed another sophistication with about 50 per cent. of pollen of several coniferæ. N. Jahrb. f. Ph. xvi. 83. A. J. P. x. 330.

ALGÆ.

Fucus vesicullosus, Lin. The hydroalcoholic extract is recom-

mended by Dr. Duchesne Dupare in excessive obesity. Dose ¾ to 2½ grs. Rép. de Ph. xviii. 397. A. D. Circ. v. 87.

F. Amansci, Lamour, is probably the plant from which the so-called Chinese gelatine is obtained, which is recommended by Lipowitz for use in the kitchen, the sick chamber and for technical purposes, destined, he thinks, soon to supersede all animal gelatine. See Canstatt's Jahr. f. 1860, 15.

FUNGI.

Spermœdia Clavus, Fries. To preserve ergot from the attack of bugs, it is to be dampened with alcohol and enclosed in a bottle tied over with paper; this is to be repeated every four months. Oesterr. Zeits. f. Ph. xiv. 44.

Dr. S. H. Smith uses ergot as a reliable sedative in cases of delirium tremens. A. M. Monthly, 1861, Dec. M. and S. Rep. viii. 18.

Sp. Maydis, Fries, produced abortion in cows and dogs. Ann. Méd. Vet. Belge. A. J. Ph. ix. 412.

Ch. S. Cressler analyzed the ergot of maize and found propylamine, viscid fixed oil, light yellow resin soluble in ether and insoluble in alcohol, much pectin, gluten and a sugar crystallizing in tufts of needle-shaped crystals, and reducing Trommer's test solution. A. J. Ph. ix. 307.

Boletus Laricis canadensis, in the form of tincture, is used by Dr. J. A. Grant, of Ottawa city, in acute rheumatism. Brit. Amer. Jour. 1862, April. Ph. J. and Tr. iv. 40.

LICHENES.

Lecanora esculenta, Ach. Dr. O'Rorke comes to the conclusion that this is the manna of the Hebrews. Journ. de Ph. et de Ch. xxxvii. 412.

Besides those above mentioned, the following papers, treating of a larger number of vegetable products used in medicine, have been published.

Notes on the botany of Ceylon, from Sir J. Emmerson Tennent's work on Ceylon, 5th edit., in Ph. J. and Tr. ii. 339.

Notes on Chinese materia medica, by Dan. Hanbury, a series of papers in Ph. J. and Tr. ii.

The vegetable products of Siam, by Sir Rob. H. Schomburgk, British Consul. Ph. J. and Tr. iii. 22.

On the vegetable remedies employed by the aborigines of Java, by Kleet Nortier. Arch. d. Ph. cviii. 20.

On the tænifuges of Abyssinia, by Dr. Courbon in Rép. de Ph. xvii. 411, and Ph. J. Tr. iii. 22.

On some new drugs from the Cape of Good Hope, by Prof. O. Berg, in Archiv d. Pharm. civ. 230.

On the medicinal flora of the neighborhood of Philadelphia, by J. M. Maisch, in Buchner's N. Repert. x., a series of papers.

On the medicinal and useful plants of Brazil, by Th. Peckolt, in Archiv der Pharmacie, 1860, 1861, 1862, a series of essays.

II. ANIMAL DRUGS.

MAMMALIA.

Castor Fiber. Prof. Holst, of Christiania, Norway, remarks that the cavity found in Siberian castor, and often considered characteristic of this variety, is merely accidental, and depends on the mode of drying. See A. J. Ph. ix. 557.

Dr. F. G. Geise reports that the beaver is still met with in the neighborhood of Aken on the Elbe; he gives the mode of drying adopted by him, and makes some other practical observations. Arch. d. Ph. cvii. 306. A. J. Ph. x. 36.

Moschus moschiferus. F. Peake gives a description of the Himalayan musk-deer, its haunts, and the method of taking the musk. Ph. J. and Tr. 1861, Feb. A. J. Ph. ix. 559.

Mettenheimer who appears to have been unacquainted with Peake's report, has in N. Jahrb. d. Ph. 1861, March, a communication on Himalya musk; he describes the bags, and regards the musk as a superior kind and well adapted for medicinal purposes.

Prof. W. Bernatzik publishes a lengthy essay on musk and the manner of examining it, and detecting its adulterations. Zeits. d. Aerzte zu Wien. 1860, iv. 24. A. J. Ph. ix. 427.

Viverra civetta. X. Landerer gives information of the collection of civet, in Archiv d. Ph. cviii. 32.

Bos Taurus. Dr. Logan recommends rennet-whey as an article of food for infants. South. M. and S. J. A. D. Circ. v. 153.

Fresh cream with the addition of rum, salt, or sugar and vanilla replaces, according to Dr. Fonsagrives, cod liver oil entirely. Rép. de Ph. xviii. 191.

Animal oil. Dr. Baker speaks highly of its use, which renders the dry hot skin in typhoid fever and other wasting diseases, cool, moist and pliant. South. M. and S. J. A. D. Circ. iv. 343.

Balæna mysticetus. Prof. Christison has fitted harpoons with glass tubes containing hydrocyanic acid, which were used near Greenland for killing the whale. Ph. J. and Tr. 1860, Aug. A. J. Ph. ix. 379.

AVES.

Gallus domesticus. Landerer states that the Greek peasants use for contusions and all sugillations an animal cataplasm, usually a chicken cut up into a mush and applied until putrefaction sets in. Archiv d. Ph. cii. 362.

Smit found that the albumen of the eggs of Cochinchina chickens dries very slowly, and soon attracts moisture again when exposed to the air. Pharm. Centralh. i. 222. Canst. Jahresb. f. 1860, 81.

Delarue recommends for the preservation of eggs to immerse them for two weeks in a mixture of 10 p. slacked lime and 3 p. of sugar with sufficient water to make a thin paste; the saccharate of lime acts as a varnish. J. de Ph. d'Anvers xiv. 551. Canst. Jahresb. f. 1860, 81.

PISCES.

Gadus morrhua. The fishy and nauseous taste of cod liver and castor oil is completely covered by Jeannel by dissolving in it a little oil of bitter almonds, or agitating it with one or two measures of cherry-laurel water. J. de Ph. et de Chim. A. J. Ph. ix. 339.

Dannecy recommends to take after cod liver oil some magnesia, to prevent its rejection from the stomach. J. de Ph. et de Chim. xli. 248. A. D. Circ. vi. Dr. H. Thomas renders the oil acceptable by forming an emulsion with lime-water. Lond. Med. T. A. D. Circ. vi. 108.

See a paper on the same subject, by J. M. Maisch, in A. J. Ph. 1856, page 1.

Compare also under Pharmacy: Jellies and Pills.

The *poisonous qualities* of some fish are treated of by Dr. Reil, in South. M. and S. J. A. D. Circ. v. 153.

AMPHIBIA.

Alligator sclerops. The female alligator of Brazil, carries a sac filled with a substance possessing a strong odor of musk. N. Jahrb. d. Ph. xvi. 309.

Bufo cinereus is according to Landerer not poisonous, its saliva producing merely a slight inflammation when in contact with the eyes. Arch. d. Ph. cii. 362.

INSECTA.

Cantharis vesicatoria. Jousse states as the result of his experiments that the Spanish flies, when worm eaten, may be still employed for plasters, provided they have been kept dry and have not undergone putrefaction. J. de Ph. d'Anvers. xvi. 468.

Directions for a number of blistering preparations are published by the Drugg. A. D. Circ. v. 222.

Apis mellifica. Honey-combs fused with the honey which they contain, are, according to Landerer, used in Greece, for suppurations and rheumatism in the form of cataplasms. Wittst. V. Schr. ix. 536.

Robinaud has founded a process for detecting the purity of beeswax on its entire solubility in hot oil of turpentine, and on its leaving one half its weight undissolved when treated with 50 times its weight of rectified (absolute?) ether. Rép. de Chim. App. Ch. N. v. 170.

Hager detects Japan wax in beeswax by boiling with a concentrated solution of borax which dissolves the former. Pharm. Cent. H. A. D. Circ. vi. 7.

Prof. Landolt, of Bonn, uses for the detection of paraffin an excess of fuming sulphuric acid, which, when heated, destroys the wax very readily, but attacks the paraffin very slowly. Dingl. Journ. clx. 224. A. J. Ph. ix. 545.

Myrmica Texana and *malefaciens.* S. B. Buckley reports on these Texan ants which are very destructive to grain. Proc. Acad. Nat. Sc. Phil. A. J. Ph. ix. 221.

On the *musky secretions* of animals, particularly of insects, see a paper by Prof. Girard, in Cosmos. A. D. Circ. v. 34.

Coccus Cacti. Cochineal was introduced into the East Indies in 1801, and is now naturalized there 4000 miles inland from the port where it was landed. See A. D. Circ. vi. 7.

The value of cochineal as a dye may be estimated by the quantity of ferridcyanide of potassium used to change the purple color of its infusion in solution of carbonate of potassa into yellowish-brown. W. Gewerbez. No. 8. A. J. Ph. ix. 410.

Prof. Lawson, of Canada, has prepared a dye from a species of Coccus, first observed in 1860 upon the black spruce, Abies nigra, Poir. Ch. N. 1861, March. A. J. Ph. ix. 367.

ARACHNIDES.

Tegedaria domestica. Dr. Donaldson uses the web of the common spider in certain fevers in the form of pills. Lond. Lancet. A. D. Circ. v. 10.

ANNULATA.

Sanguisuga medicinalis. Roth has found that leeches keep excellently in distilled water. N. Jahrb. f. Ph. xiv. 166.

Vayson keeps leeches in an earthen vessel, the bottom of which is perforated with holes and covered with earth, to be inserted into another vessel containing water, so that the latter rises but a few inches above the earth. Dr. J. Mill Frodsham uses this method also for leeches after they have been used. See A. D. Circ. iv. 243.

See also communications on this subject by J. M. Maisch, in M. and S. Rep. vi. and by B. Fentner, of Rochester, N. Y., in A. D. Circ. iv. 279.

Schrötter states in Württ. Med. Corr. Bl. that leeches bite very readily after their backs have been moistened with wine, even such that had been used some time before, and were squeezed moderately afterwards.

Tedesco recommends to dip a linen rag into wine, squeeze it well and wrap it around the leech, which is afterwards applied. J. de Ph. d'Anvers, xvi. 103. Canst. Jahresb. f. 1860, 82.

III. MINERALS.

Only such minerals are included here which are either used for preparing medicinal chemicals, or the principal constituents of which are employed in medicine.

Fluorine. *Cryolite* was found by St. Claire Deville to contain Al 12·7, Na 31·8, Fl 55·5 and small proportions of nitrate of cerium, phosphoric acid and vanadium. Ch. N. v. 85.

Boron. *Tinkalzite* from Peru, was analysed by Dr. T. L. Phipson; it contains HO 34, NaO 11·95, CaO 14·45, BO_3 34·71, Cl 1·34, SO_3 1·10, SiO_3 0·60, Sand 2·00 and traces of PO_5, Al_2O_3, MgO. Technologiste, Sept. 1861. A. J. Ph. x. 60.

Borate of lime, *rhodizit*, is now largely exported from the west coast of Africa; it contains 41 per ct. borate of lime and 53 per ct. borate of soda. A. D. Circ. v. 7.

Nitrate of Soda. The beds of this salt are called salitre in Brazil. See the report of a British Consul in Ch. N. iv. 98. A. J. Ph. ix. 502; also a report on the production of nitrate of soda at Iquique, Peru, in Ch. N. v. 31. A. D. Circ. vi. 39. A. J. Ph. x. 263.

Carrara marble. Berthier's analysis yielded 98·1 carbonate of lime, 0·9 carbonate of magnesia, and 1 per ct. clay and quartz. Ch. N. ii. 239.

Baryta was found by Alex. Mitscherlich in several feldspars amounting to from 0·45 to 2·33 per ct. Arch. d. Ph. civ. 25.

Hydromagnesite of Sasbach. P. Meyer found it to consist of $4MgO,CO_2,MgO,HO$, a little magnesia being replaced by lime. Ann. d. Ch. und Ph. xxxix. 129.

Manganium. Debray and Deville found in a binoxide of manganium 3·069 salts, consisting of CaO,SO_3, ·206, CaCl. 410, MgCl ·168, NaCl ·348, NaO,NO_5, ·706 and KO,NO_5 1·258; they consider it to have been produced probably by the decomposition of nitrate of manganous oxide under the influence of heat. Cpt. rend. 1860, N. 19.

Binoxide of manganium of superior quality was discovered upon the land of Jno. Kohler, in Maxatawny township, Berks Co., Pa., and is now being worked. Drug. ii. 135.

Prof. H. Kolbe weighs the carbonic acid of the carbonates in a Liebig's potassa apparatus, and estimates afterwards the binoxide from the carbonic acid evolved by it with oxalic acid. Ann. d. Ch. und Ph. cxix, 130. A. J. Ph. x. 33.

The *chrome mines* of West Chester Co., Pa. See a communication in A. D. Circ. A. J. Ph. ix. 234.

Antimony. E. Müller found in the black sulphuret of antimony of Liptau ·917, of Rosenau ·378, of Luxemburg ·592, sulphide of arsenic; the mineral from Ueatrop was free from it; the antimony amounted to between 67·687 and 70·601 per ct. Arch. d. Ph. ciii. 1—9

Platinum ore of California was found by A. Kromayer to contain Pt 63·3, Ir 0·7, Rh 1·8, Pd 0·10, Au 0·3, Hg 0.6, Cu 4·25, Fe 6·4, Osmiridium and sand 22·55. Arch. d. Ph. ci. 14.

IV. MEDICINAL CHEMICALS.

1. *Inorganic Compounds.*

NON-METALLIC ELEMENTS.

Oxygenium is considered by Dr. Ozanam a reliable antidote against the effects of ether and chloroform. Cpt. rend. li. 59. A. D. Circ. iv. 243. v. 151.

Hydrogeni Binoxidum was experimented with by Dr. Richardson, who expects to derive beneficial results from its use in typhus, diabetes, decomposing sores, &c. Lond. Lanc. 1860, ii. A. D. Circ. v. 130.

Acidum Nitricum, (dilute?) in doses of 5 to 6 drops is stated to be an excellent remedy against hoarseness of singers; it may be increased to 10 or 12 drops. Gaz. Méd. de Lyon. Arch. d. Ph. cv. 223.

Sulphur lotum is regarded by Dr. Duclos, of Tours, as a powerful preventive of asthma; the daily dose is 0·5 to 1 grm. A. D. Circ. v. 190.

Sulphur præcipitatum. W. Crossley found a sample adulterated with 51·08 per ct. sulphate of lime. Ch. N. iii. 282.

Acidum sulphuricum. Filhol and Lacassin obtained from 3 samples of the commercial acid a trace, 0·563 and 1·287 per ct. arsenious acid respectively. Rép. de Ph. xviii. 476.

Acid. sulph. aromaticum was used by Dr. Darrach, of Quincy, Ill., for the expulsion of tape worm. A. J. Med. Sc. A. D. Circ. iv. 315.

Phosphorus. Burns produced by it, lose in a remarkably short time the phosphorescence and pain if dipped for a few minutes into a solution of hypochlorite of soda, containing some magnesia in suspension. Württ. Med. Corr. Witts. V. Schr. ix. 420.

Hypophosphites of the alkalies as manufactured by Ch. Taylor, of Liverpool, are considered valuable medicines by Dr. J. Taylor of the same place. Lond. Lanc. 1862, i. 87.

Chlorinium. Its effects on the respiratory organs are neutralized according to Bolley by inhaling aniline; Wittstein reminds that sulphhydric acid gas will produce the same relief instantly. Witts. V. Sch. ix. 413.

Acidum chlorhydricum. Chronic dyspepsia is treated by Dr. Schotten, of Dresden, by the dilute acid. To aged persons he gives chloride of sodium and sulphate of quinia, to be followed by a dilute sulphuric acid. Archiv d. Heilk.

A correspondent of the Chem. News, ii. 59, mentions the cases of several consumptives who were cured by the inhalation in a chemical factory, of atmosphere charged with the vapors of muriatic acid.

Filhol and Lacassin found in three commercial samplès 1·2, 2·225 and 5·07 per ct. AsO_3 respectively. Rép. de Ph. xviii. 476.

Iodinium. Dr. B. Woodward of Galesburg, Ill., reports his experience regarding the successful treatment of cases of poisoning by snake bites, with tincture of iodine. Chic. Med. J. 1860. A. D. Circ. v. 35.

ALKALIES AND THEIR COMPOUNDS.

Potassii sulphidum, of French manufacture, was found by Adrian to contain sodium, instead of potassium, soda having been substituted for potash. J. de Ph. et de Ch. xxxvii. 342.

Potassii bromidum is regarded by Dr. Pfeiffer of Paris as possessing a decided influence over the muscular power of the genito-urinary apparatus. Bull. gén. de Thér. A. D. Circ. v. 33, 62.

Dr. Guersant, Surgeon to the Hôpital des enfans malades, states that this salt in subdivided doses produces a sort of anæsthesia in certain parts of the throat. Lond. Lanc. A. D. Circ. v. 207.

Potassii iodidum is reported of service as injection in leucorrhœa, (N. O. M. and S. J.) and internally in asthma. Bost. M. and S. J. A. D. Circ. iv. 329.

A case of poisoning by this salt is reported in Nass. Med. Jahrb. 1861, 747. See an account in A. D. Circ. v. 233.

Potassæ chloras, is reported by Dr. Irvin, U. S. A., to be an effectual remedy in urethral inflammation, used as injection. M. and S. Rep. See Braithw. R. xliv. 170. Used internally and as a mouth wash, it is serviceable in fetid breath. Bull. de Thér. A. D. Circ. v. 224. In tubercular affections, Dr. J. Twell has been using a strong solution of this salt almost ad libitum. Med. Times and Gaz. 1861, June 1. According to Dr. Isambert, the chlorate is very rapidly absorbed and eliminated by the salivary glands and kidneys. See Bost. M. and S. J. 1860. Dent. Cos. ii. 133.

Potassæ bicarbonas. J. Laneau detected in a commercial sample, a lead compound yielding 1-10th per cent. sulphide of lead. J. de Méd. de Brux. 1860, 615.

Sodæ bicarbonas. Laneau, Francquis and Depaire have found a small quantity of arsenic (3-10.000ths) in commercial bicarbonate of soda. Bul. de la Soc. de Brux. Archiv d. Ph. cii. 347.

Sodæ hypochloris, containing a little magnesia in suspension, cures the pains of burns in a few minutes; chlorinated lime has the same effect. Archiv d. Ph. cv. 223. See Phosphorus.

Ammonii iodidum, is used by Dr. Gamberini of Bologna in constitutional syphilis in place of iodide of potassium, than which it acts more rapidly and in much smaller doses. See A. D. Circ. v. 35.

Liquor ammoniæ acetatis is recommended by J. M. Maisch to be prepared by neutralizing acetic acid with ammonia. A. J. Ph. viii. 523.

Lithiæ carbonas. Dr. Squibb has a paper on this salt and its efficacy in removing uric acid deposits. See A. D. Circ. v. 54.

ALKALINE EARTHS AND EARTHS.

Barii chloridum was used by Dr. Guecchi of Milan, in traumatic tetanus. Gaz. Med. Ital. Lomb. Rép. de Ph. xviii. 478.

Calx chlorinata. See a paper on its usefulness as an insecticide in Dingl. Journ. A. J. Ph. x. 364.

Magnesia, to be regarded as pure, according to Amédée Vée must be readily and entirely soluble in dilute sulphuric acid; this solution must not be precipitated by alcohol or by an excess of ammonia. Rép. de Ch. appl.

Cerii oxalas. Since the recommendation of this compound by Prof. Simpson, it has been largely made use of, and appears to fulfil all that could be expected. Among others, see paper by Dr. Ch. Lee in A. J. Med. Sc. 1860. Oct. A. D. Circ. iv. 312, by Dr. A. Lloyd in Lond. Lanc. 1861, ii. 538, &c.

Aluminæ hypochloris. Orioli recommends this salt as preferable to hypochlorite of lime or soda for bleaching and disinfecting purposes. Polyt. Notizbl. Ch. N. ii. 215. A. J. Ph. ix. 80.

HEAVY METALS.

Ferrum reductum per hydrogenio, was observed by Lienard to be adulterated with over 14 per cent. graphite. Arch. d. Ph. ciii. 100. See also a paper by J. M. Maisch on the impurities in commercial iron by hydrogen in A. J. Ph. ix. 20.

H. N. Draper estimates the impurities by combining the iron with iodine and weighing the insoluble portion. Ch. N. A. D. Circ. iv. 269.

On the difficulties attending its preparation see a paper by De Luca in J. de Ph. et de Ch. xxxviii. 275. Ch. N. ii. 306. A. J. Ph. ix. 153. Its preservation by enclosing it in small sealed glass tubes filled with hydrogen, is recommended.

Ferri protochloridum is prepared free from perchloride, by E. Amsler, by adding some powdered iron and strong muriatic acid, after the solution had been evaporated nearly to dryness. Schweiz. Zeits. v. 123. A. J. Ph. ix. 110.

Ferri perchloridum. Its solution is extolled by Dr. Rodet of Lyons, France, as a specific against the virus of hydrophobia, if applied within two hours after the bite. A. D. Circ. v. 189.

A normal solution containing one half of the (anhydrous ?) salt is used by Dr. Deleau: for syrup, 1 to 49 p. simple syrup; as injection, 1 to 31 p. water; as ointment, 1 to 4 p. lard; as sparadrap, 1 to 4 parts of concentrated solution of isinglass, a sufficient (?) quantity of hydrated peroxide of iron being added to each preparation. J. de Ch. Méd. A. D. C. iv. 339.

If the solution is to contain half its weight of *anhydrous* perchloride it will not keep without crystallizing. For preparing the liquor, Lebaique recommends to use the sublimed perchloride. Ph. J. and Tr. iii. 122. See also Adrian's process in A. J. Ph. ix. 327.

Ferri oxidum hydratum and *Ferri sulphidum hydratum*. J. B. Fasoli communicated to the Bavar. Acad. of Sc. the results of a series of experiments in which these compounds were successfully employed as antidotes to arsenic. N. Rep. x. 251.

Ferri subcarbonas. Dr. W. H. Pile met with a lot containing 41 per cent. of white clay, and 5 per cent. of gypsum. A. J. Ph. x. 24. To be perfectly soluble, T. A. Rex dries it at a temperature not exceeding 80°. A. J. Ph. x. 193.

Ferri perphosphas is administered by Prof. Simpson in solution in phosphoric acid, which he considers the most palatable form. A. D. Circ. v. 151.

Syrups containing such a solution have been used in the United States for years.

Zinci oxidum was met with by J. Laneau, which contained 7¼ per cent. finely granulated zinc. J. de Méd. de Brux. 1860, 615.

Cupri oxidum, in the form of pill, 1 gr. pr. dose, was successfully tried by Dr. Thienemann for tænia. Berl. Med. Zeitung. N. x. A. D. Circ. v. 223.

Plumbum. Dr. Schotten reports the case of a man who died from the effects of lead produced by the use of a lead comb blackened in a flame; the brains contained lead. Zeits. f. Nat. und Heilkunde. 1860, 164.

Plumbi carbonas, was found by Dr. A. Adraini adulterated with 22 per cent. sulphate of baryta, by G. J. Johnson, to the extent of 30 and 32 per cent. Ch. N. iv. 43, 69.

Acidum arseniosum. Schmidt and Stürzwage have proved by experiments that even small doses of arsenious acid, introduced into the circulation, occasion a considerable diminution of the waste of the tissues, amounting to between 20 and 40 per cent. J. f. pr. Ch. A. D. C. v.56. See also a paper by Storer in A. J. Sc. and Arts. A. D. Circ. iv. 312.

Sodæ arsenias, in doses of 1-12th to 1-3d gr. daily, is recommended by Bouchut in scrofula. Bull. Ther. A. D. Circ. v. 107.

Caffeina arsenias, and *Acidum tanno-arsenicum*, have been used by Dr. Gastuel of Cairo, Egypt, as a substitute for quinia in intermittents, and Dr. Schnepf of Alexandria has used the

latter in daily doses of 0·2 grm. Gaz. des Hôp. 1862. Jany. 21. A. M. Monthly, xvii. 267.

Antimonii sulphidum nigrum. In four samples, R. Reynolds found between 0·25 and 1·33 per cent. sulphide of arsenic. Ph. J. and Tr. Ch. N. v. 267.

Compare also Minerals.

Bismuthi oxidum, (oxychloridum?) is recommended by Dr. Gaby of Paris in gleet and leucorrhœa. N. A. M. Rep.

Bism. subnitras, made into a paste with glycerine, was found by Dr. Richardson to be a useful application to burns. A. M. Times.

Hydrargyrum. See a paper on the trade in mercury, particularly of the California mines, in Mining Chronicle and A. D. Circ. v. 34.

Hydrargyrum cum creta. Dr. J. C. Beck, of Cincinnati, experimented on several samples obtained from Apothecaries, and found in one 15 per cent. binoxide of mercury. Cinc. M. and S. News. 1860, Aug. M. and S. Rep. vii. 441.

Of what color was this specimen?

Hydrargyri oxidum. Dr. Richardson has experimented with it, and expects beneficial results in typhus, diabetes, &c. Lancet, 1860, ii. A. D. Circ. v. 130.

2. *Organic Compounds.*

CYANOGEN COMPOUNDS.

Potassii cyanidum. In a case of poisoning by this salt, F. Venghaus found free hydrocyanic acid in the blood. Arch. d. Ph. cii. 138. A. J. Ph. ix. 217.

Ferri ferrocyanidum administered to the mother, was found by Prof. Mayer, of Bonn, to color the bones of the fœtus blue. See A. D. Circ. v. 82.

ORGANIC ACIDS.

Acidum aceticum. Jno. Lightfoot detects empyreumatic products observed by Wittstein, see A. J. Ph. ix. 408, when in minute quantities, by neutralizing the acid with an alkali and adding permanganate of potassa, which is decolorized by these matters, and produces on standing a brown precipitate. Ch. N. iv. 290. A. J. Ph. x. 185.

Acetum. L. Dusart gives a process for detecting an adulteration with tartar, founded upon peroxide of iron not being precipitated by potassa in the presence of tartaric acid. Rép. de Chim. Ch. N. ii. 303. A. D. C. v. 59. A. J. Ph. ix. 148.

Pure vinegar dissolves in a short time a little tin from tin measures. Arch. d. Ph. ci. 115. A. J. Ph. ix. 115.

Acidum tartaricum. Buffet has detected copper in commercial tartaric acid. Rép. de Ph. xvii. 101.

Ferri et potassæ tartras is recommended by Prof. Cooper, of San Francisco, in the California variety of psoriasis, A. D. Circ. v. 206, and by Dr. Willshire in rheumatism. Lancet, 1862, i. 1857.

Acidum citricum has been employed by Dr. Hartung, of Aix-la-Chapelle, in acute rheumatism, in doses of about 1¾ grs. every hour, night and day. A. M. Monthly. Drug. ii. 170.

The adulteration with tartaric acid is detected by a little strong solution of potassa which yields white crystalline bitartrate, but dissolves citric acid entirely. Bull. de Thér. A. J. Ph. viii. 564.

Ammoniæ benzoas is used in albuminuria following scarlatina. Lond. Lancet. A. D. Circ. vi. 42.

Acidum phenylicum is recommended by Dr. Lemaire in tinea and itch. Journ. de Brux. xxxii. 471. Kühtze's Not. xxv. 284.

Lemaire's experiments have proved Dumas' suggestions to be correct, that the disinfectant properties of coal tar, recommended for that purpose by Corneand Demeaux, are dependent upon the carbolic acid which it contains. Ch. N. iv. 60. A. J. Ph. ix. 550.

Is carbolic acid not rather an antiseptic, than a disinfectant?

Charcoal saturated with phenylic acid, and the alkaline phenates are stated by Dr. Bobœuf to act as hemostatics. Cpt. rend. 1861, July. A. D. C. v. 207.

See also a paper by Dr. F. Crace Calvert on some applications of carbolic acid as an antiseptic. Ph. J. and Tr. 1861, Dec. A. J. Ph. x. 159.

Creasotum is recommended by Dr. Gerlach externally in itch;

internally in combination with ammonia or lime water, by Dr. Blackwell, in irritable conditions of the stomach. M. and S. Rep. A. D. Circ. v. 181.

Acidum tannicum, 10 to 20 grs. to the ounce of solution has been employed by Dr. S. S. Scoville in certain cases of diphtheria. A. D. Circ. v. 190; it is considered by Dr. Kurzak the most reliable antidote to strychnia, Zeits. d. Aerzte zu Wien, Ph. J. and Tr. ii. 227; and was used by Dr. Patze in cases of poisoning by strammonium and solanum nigrum. M. and S. Rep. A. D. Circ. iv. 315.

ETHERS AND ALCOHOLS.

Alcohol. In their work on alcohol and the anæsthetics in the organism, Lathmand, Perrin and Duroy come to the conclusion that it is eliminated unchanged by the various secreting organs, and that it is deposited in all tissues. A. J. Ph. ix. 432.

Spiritus frumenti. Whiskey freely administered proved effectual in two cases of snake bites in the hands of Dr. A. V. Warr, New Orl. M. and S. J. Dr. Hugh Kelley has used it as a prophylactic in typhoid fever. N. Car. M. Journ. A. D. Circ. v. 133, 138.

Æther has been used with success externally in neuralgia by Dr. Betbeder. L'Union Méd. A. D. Circ. iv. 246.

Miss Cléret discovered accidentally its usefulness for the cure of deafness. A commission appointed to examine the alleged curative powers, reported manifest improvement in all cases; the application consists in dropping 4 to 8 drops daily into the external auditory canal. Gaz. des Hôp. 1860. A. J. Ph. viii. 557.

Chloroformum. Lepage of Gisors examined the various methods for the detection of alcohol: chromic acid is rejected, as being reduced by both alcohol and chloroform; oil of almond, Soubeiran's test, will not detect less than 5 or 6 per ct.; Roussin's test shows still 1-1000th part, the binitrosulphide of iron imparting a brown color, increasing in density with the proportion of alcohol. J. de Ph. et de Ch. 1860, xxxviii. 93. Ch. N. ii. 138.

Hardy uses sodium, which disengages gases with alcohol and other impurities, but, as observed by Heintz, not with chloroform. Rép. de Chim. Ch. N. v. 286.

Where excitement precedes the sedative effects of the inhalation of chloroform, Dr. Hewitt, of Louisville, attributes it either to impurities or to a previous state of alarm on the part of the patient. Dent. Cosm. ii. 52.

Of inhalation of chloroform in Asiatic cholera, Dr. J. Rowell has observed beneficial results. S. Frank. M. Press, 1861, Jan. M. and S. Rep. vii. 12.

Prof. Bock uses it externally for itch; Dr. Briquet in hysteric attacks applied to the nostrils, and Prof. H. L. Bird as inhalation in congestive chills. See A. D. Circ. v. 10, 11, iv. 315.

Dr. Ramon Alienza has after the recommendation of Poblacon and Mautre in 1857, used chloroform in intermittents, and found that it reduces the severity of the paroxyms, increases the readiness to yield to quinia in small doses, and diminishes the frequency of relapse. L'Union Méd. 1861. A. D. Circ. vi. 26.

Glycerinum. Mayer detected in a commercial article chloride of calcium. N. Jahrb. d. Ph. xvi. 23. A. J. Ph. x. 329.

Gros-Renaud in speaking of some of the uses of glycerine, states that it will preserve gum arabic and albumen for a considerable length of time. Schweiz. Z. f. Ph. v. 127. A. J. Ph. ix. 111.

Its external use as a sudorific in dropsy, is recommended by Dr. James Jones. Lond. Lancet, 1862, i. 94.

ORGANIC ALKALOIDS.

Cinchoniæ sulphas has been successfully experimented with in the French hospitals as a substitute for quinia. Ch. & Dr. A. D. Circ. v. 235.

Dr. Moutard Martin, however, concludes from carefully observed cases that it is more variable and less reliable in its action than sulphate of quinia, but that it may become a valuable adjunct to the latter. L'Union Méd. A. D. Circ. iv. 314.

Quiniæ sulphas, given in large doses during pregnancy, accord-to Dr. E. Warren produces abortion. Med. J. N. Car. A. D. Circ. iv. Prof. J. G. Westmoreland uses it in acute rheumatism. Atlanta M. and S. J. A. D. Circ. v. 10.

Quiniæ iodosulphas was used by a correspondent of the Am. D. Circ. iv. 285, in hæmoptysis, tuberculosis, scrofula, &c., in doses from ½ to three grains three or four times a day.

Quiniæ ferri et magnesiæ sulphas. A mixture of 1, 3 and 16 p. respectively of the (crystallized or dry?) sulphates is stated by Dr. Fergus, of Marlborough College, to yield a permanent solution, and to be peculiarly adapted for medicinal purposes. M. T. and Gaz., 1861, March 17th. A. J. Ph. ix. 238. A. D. Circ. v. 129.

Quiniæ et ferri ammonio-citras is recommended by Mr. S. Thompson on account of its solubility; it is of an olive green color, and contains 1-6th citrate of quinia. J. Md. Coll. Ph. ii. 1. A. J. Ph. ix. 265.

A similar salt has been imported from England for several years past.

It will be remembered that the Pharm. Soc. of Paris had offered a prize of 6000 francs, to which the minister of war had added another 4000 francs for the discovery of a substitute for quinia, or of a process for its artificial preparation. The time had been extended to July 1st, 1861, but whether it was claimed by any one we have not heard.

Berberinæ sulphas is again directed attention to by the Journ. of Rat. Med. as a substitute for quinia. A. D. Circ. v. 222.

Piperina has been found to be an energetic and rapid febrifuge, by Dr. Meli, of Venice. A. M. T. J. Mat. Med. ii. 392.

Metamorphia, the alkaloid discovered by Wittstein, was used by Dr. Fronmüller as a sudorific in place of morphia. Witts. V. Schr. x. 262. A. J. Ph. ix. 408.

Atropiæ sulphas. One or two drops of a solution in 100 p. water is recommended by Dr. Bergouhniaux as a local anæsthetic to facilitate the extraction of teeth. Rép. de Ph. xvii. 110.

Strychnia was used by Prof. N. S. Davis in typhoid fever (Chic. M. Ex.) and by Dr. J. M. Gaston, of Columbia, S. Car., in spermatorrhœa. South. M. and S. J. A. D. Circ. v. 10, 87.

Veratria is preferred by Dr. Vogt, in the treatment of typhoid fever to quinia. Bull. de Thér. A. D. Circ. v. 131.

Anilinæ sulphas has been employed by Dr. James Turnbull, of Liverpool, in six cases of chorea; it produces transient alteration of the color of the skin and lips. Ch. N. iv. 286. A. D. Circ. v. 232. A. J. Ph. x. 62.

GLUCOSIDES.

Kosman, and after him Bouchardat, remind of the inadmissi-

bility of the administration of free acids, emulsin, &c., when glycosides, or the drugs containing them, are prescribed. Rép. de Ph. 1860, Sept. A. D. Circ. iv. 338.

Santoninum. To prevent substitutions of strychnia, Prof. Henkel, of Tübingen, recommends for dispensation only the santonin which has turned yellow under the influence of light. N. Rep. x. 132. A. J. Ph. ix. 404.

Santonin is stated in the Eclec. Med. J. to be useful in retention of urine, in doses of 2½ to 5 grs. A. D. Circ. iv. 315.

Colocynthin. Prof. Walz recommends for medicinal purposes the process of Hübschmann. See A. J. Ph. x. 333. Compare also the remarks of Prof. Procter on commercial colocynthin, ibid. x. 137.

CARBOHYDROGENS.

The carbohydrogens of coal oil are stated by W. Schmid to be far more poisonous than petroleum. Arch. der Ph. A. D. Circ. v. 133.

Keroseline, evidently the light carbohydrogens of coal oil, was referred to in the Bost. M. and S. Journ 1861, July 11, as having been recommended as an anæsthetic, and tested by Dr. H. J. Bigelow with rather unfavorable success. E. Parrish, in A. J. Ph. ix. 396, gives some information of its properties, and shows it to be a variable mixture, sometimes containing benzine.

Camphora is recommended by Dr. M. T. Dodge as an antidote to strychnia. Pacif. M. and S. J. A. D. Circ. iv. 343.

Olea destillata. For detecting their adulteration with castor oil, H. Napier Draper has worked out a process which depends on the formation of œnanthylic acid produced under the influence of nitric acid. Dubl. M. Pr. Ph. J. and Tr. iii. 27.

INORGANIC CHEMISTRY.

The subjects have been arranged in nearly the same order, laid down in Prof. Graham's Elements of Chemistry.

Non-metallic Elements.

OXYGEN.

Preparation. The cheapest way to obtain oxygen, on a large scale, according to St. Clair Deville and H. Debray, is by heat-

ing sulphate of zinc, or by passing sulphuric acid through a red hot tube. The sulphurous acid is absorbed by water or alkalies. Rép. de Ph. xvii. 277. A. D. Circ. v. 58. A. J. Ph. ix. 145.

Ozone, prepared by electric discharges from pure oxygen is condensed in volume; Andrews and Tait therefore conclude that the density of ozone must be represented by a number corresponding with a liquid or solid.

Löwenthal observed that oxygen becomes active in the presence of chloride of tin, by chlorous and hypochloric acid and perphosphate of manganium, but not by bromine, chlorine, iodine or chloride of lime. He announces a third allotropic modification of oxygen. J. pr. Ch. cxxix. 473. A. D. Circ. v. 9.

The odorous principle of the "stinkfluss" a fluor spar of Welsendorf, Bavaria, contains according to Schönbein about 0·02 per cent. ozone. Pogg. Annal. 1860, 561. A. D. Circ. v. 81.

Prof. Schönbein has still continued his interesting researches on the allotropic modifications of oxygen and their influence on other compounds. See Buchner's N. Repert. 1860 and 1861. Also, A. D. Circ. v. 9. and 10.

Bœttger finds that a mixture of 2 p. permanganate of potassa and 3 p. sulphuric acid gives off ozone for several months. See Ch. N. iv. 69.

HYDROGEN.

Water. Pure water has a bluish color, the various colors of natural waters were found by Wittstein to be owing to organic matters. Witts. V. Schr. x. 342. A. J. Ph. ix. 509.

De Luca found that water in the spheroidal state has a temperture not exceeding 80° C. and probably as low as 50°. J. de Ph. et de Ch. xxxviii. 268. A. D. Circ. iv. 329.

P. H. Boutigny found it much higher and considers it near 96°·5 ; he also shows that other chemists have found its temperature near that point. Ibid. xxxix. 273. But De Luca shows that under the conditions he operated, it cannot have the temperature assigned by Boutigny. Ibid. xl. 285.

Ice at —8 to —10°C. has according to Dufour a density of ·917. Ph. J. and Tr. 1860. Oct. A. J. Ph. ix. 379. Drug. ii. 166.

Binoxide of hydrogen, which has been found by Dr. H. Storer to be a test for chromic oxide, is prepared by Prof. R. Böttger in

ethereal solution when it will keep unaltered for a considerable length of time. See Witts. V. Schr. ix. 546. A. J. Ph.

Riche observed that the oxygen evolved from binoxide of hydrogen by sulphuric acid is of the active modification, while potassa liberates it in the ordinary condition. Rép. de Chim. pure vii. 178.

Professor Schœnbein thinks that all but the noble metals will produce this binoxide if oxidized slowly in moist oxygen. J. f. prakt. Ch. lxxix. 873. Ch. N. iii. 253.

NITROGEN.

Nitric acid. H. E. Roscoe has experimented with acids of different strength to ascertain the effect of heat under ordinary and increased pressure. The strongest acid obtainable contained 99·80 per cent. NHO_6 and appears to be decomposed at the common temperature. The residue from the boiling of nitric acid, ultimately contains 68 per cent. NHO_6, has a specific gravity of 1·414 at 15°·5 C., and its boiling point at 120°·5 C. See the details of his results in Ann. d. Ch. und Ph. xl. 204.

CARBON.

Graphite is separated, according to Dr. P. Pauli, when black ash, which is principally hydrated soda with various salts and cyanogen compounds, is heated with nitrate of soda to a low red heat. Cpt. rend. Ch. N. iv. 78.

Carbonic acid, is prepared on a large scale, by Meschelynck and Lionnet, by passing a current of steam through retorts filled with chalk and heated to dull redness. See A. J. Ph. viii. 564.

A. Loir and Ch. Drion give a process for solidifying carbonic acid in Cpt. rend. Refer to Ch. N. iv. 18. A. D. Circ. v. 235. A. J. Ph. ix. 529.

On the properties of liquid carbonic acid, see a paper by G. Gore in Proc. Roy. Soc. A. J. Ph. ix. 328. A. D. Circ. v. 156.

BORON.

In a paper read before the Lond. Ch. Soc. Prof. Bloxam shows that boracic acid ought to be regarded as tribasic. Ch. N. iii. 368.

SILICON.

Prof. Th. Scherer, who studied the behaviour of silicic acid to the alkaline carbonates, reasons from his results in favor of the formula SiO_3. Ann. d. Ch. und Ph. xl. 129. Ch. N. iii. 208.

SULPHUR.

Sulphuric acid, entirely free from arsenic, was obtained by Prof. Bloxam from sulphurous acid and nitric oxide only when both had been prepared at the lowest possible temperature. See Ph. J. and Tr. iii. 606.

Dr. Lyon Playfair states the specific gravity of HO,SO_3, to be 1·848; near its boiling point, but not below 550° F., it loses some anhydride. Ch. N. iii. 19. A. J. Ph. ix. 175.

The residue of the continuous boiling of sulphuric acid of any strength contains 98·7 per cent. SHO_4. Roscoe thus corroborates Marignac's observations. Ann. d. Ch. und Ph. xl. 212.

Prof. Kolbe observed that rather strong SO_3 is reduced by nascent hydrogen with the formation of HS. Ann. d. Ch. und Ph. cxix. 174. Ch. N. v. 337.

Sulphurous acid is prepared by Anthon, of definite strength from sulphate of lime and sulphuric acid; he furnishes a table of the specific gravity of the acid of different strength.

Hugo Schiff records the results of his experiments on the action of sulphurous acid on metals and metallic oxides at a high temperature. Ann. d. Ch. und Ph. cxvii. 392. Ch. N. iii. 282.

Two double hyposulphates, are described by Dr. Kraut; their composition is BaS^2O_6, NaS_2O_6+4aq and $AgS_2O_6,NaS_2O_6 + 4\ aq$. Arch. d. Ph. cvi. 129. Ch. N. iv. 111.

SELENIUM.

Dr. H. Uelsmann has prepared and analyzed a number of compounds of selenium, analogous to the sulphides and sulphur bases. Ann. d. Ch. und Ph. xl. 122.

THALLIUM

Is the name of a new element discovered by W. Crookes in the seleniferous deposits from the sulphuric acid manufactured at

Tilkerode, Germ. His first notice is contained in Ch. N. iii. 193. In the same volume, p. 303, he describes the process for isolating it.

PHOSPHORUS.

Cari Mantrand prepares phosphorus economically, by blowing muriatic acid through the red hot mixture of calcined bones and charcoal; the products are carbonic oxide, chloride of calcium and phosphorus. Gen. Indust. A. D. C. v. 173.

Will not the hydrogen of the muriatic acid combine with phosphuretted hydrogen, the compound which the author sought to avoid?

The luminosity of phosphorus is arrested in air saturated with the vapors of some carbohydrogens and ether. Rép. de Ph. A. J. Ph. ix. 412.

On the use of phosphorus in the manufacture of matches, see a lengthy paper by G. Gore in Ch. N. iv. republished in A. J. Ph. x.

Phosphoric acid. In making it from phosphorus and nitric acid, Elsner recommends to employ a large dish in order to avoid explosions. Ch. techn. Mitth. f. 1859. Ch. N. iv. 83. A. J. Ph. x. 187.

Dr. J. Neustadtl prepares the acid from calcined bones, by converting them into phosphate of soda, then into phosphate of baryta which is decomposed by sulphuric acid. Dingl. Journ. clix. Ch. N. iv. 13. A. J. Ph. ix. 475.

To convert monohydrated into ordinary phosphoric acid, J. M. Maisch found it necessary to boil it with nitric acid. See his paper in A. J. Ph. ix. 385.

Uninflammable phosphuretted hydrogen is converted into the inflammable compound by passing it through nitric acid containing a drop or two of hyponitric acid. Ann. d. Ch. und Ph. xl. 193.

CHLORINE.

Preparation. Chlorine is prepared by Laurens, by heating chloride of copper which is decomposed into Cl and Cu_2 Cl. Rép. de Chim. A. D. Circ. vi. 37.

Perchloric acid is prepared by Roscoe, by decomposing chlorate of potassa with hydrofluosilicic acid and boiling the chloric acid.

Monohydrated perchloric acid crystallizes; the most concentrated solution contains 27·7 per ct. water, and is an oily liquid. For cautels to be observed, and its dangerous properties, refer to Ch. N. iv. 155. A. J. Ph. x. 187.

Hydrochloric acid, when evaporating, leaves according to Roscoe a residue containing at 0° C. 25 per ct. HCl; for each 5° C. more, it contains 0·1 or 0·2 per ct. less; at 70° C. 22·6 per ct.; above this temperature for every 5° 0.3 per ct. less, at 100° 20·7 and at the boiling point 20·2 per ct.=HCl,+16HO. Ann. d. Ch. und Ph. xl. 213.

Chlorine and sulphuretted hydrogen are displaced from the acid by a current of carbonic acid. Rép. de Ph. xvii. 43. A. D. Circ. iv. 288.

B. Hirsch has frequently observed the acid contaminated with iodine resulting from the presence of iodides in the salt, which he recommends to wash with water previous to distillation. Arch. d. Ph. cix. 124.

BROMINE.

Reinsch found that an alcoholic solution of bromine diluted with water bleaches litmus, the color being restored by ammonia, while chlorine bleaches it permanently.

Hydrobromic acid, after boiling, contains according to H. C. Roscoe, between 47·38 and 47·86 per ct. HBr; hydriodic acid 56·9 to 57·16 HI, and hydrofluoric acid between 35 and 38 HFl. Ann. d. Ch. und Ph. xl. 215, 217, 219.

IODINE.

Leon Krafft found iodine in the motherliquor of saltpetre, in Peruvian nitrate of soda and in commercial chloride of potassium. Monit. Scient. ii. 95, 1070. Ch. N. ii. 14.

Preparation. Dr. Luchs liberates it from the crude iodides by chromic acid; (Witts. V. Sch. x. 536. A. J. Ph. x. 327.) Wagner by perchloride of iron, by which bromides are not decomposed. Jahresb. d. Chem. Technol. 1860, 194.

Iodic acid. A process for its preparation is given in A. D. Circ. iv. 249, consisting in the action of nitric acid on tincture of iodine.

The acid yields with dry SO_2, according to Dr. H. Kämmerer,

a yellow compound, $5IO_5\,SO_3$; subsequently a brown yellow powder, I_8O_{13}. J. f. pr. Chem. lxxxiii. 72. Ch. N. iv. 83.

Iodides. Liebig recommends a process in which phosphorus is used, for the details of which we refer to Ann. d. Ch. und Ph. cxxi. 22. A. D. Circ. vi. 86, and to a paper by Mich. Pettenkofer in Ann. d. Ch. und Ph. cxxi. 225. N. Rep. xi. 80.

Prof. F. F. Mayer has made a great improvement in the employment of metallic iron. See his essay in A. J. Ph. x. 289.

Metals of the Alkalies, Alkaline Earths and Earths.

Rubidium and Cæsium are two new metals, discovered by Kirchhoff and Bunsen, by means of spectral analysis, in some mineral waters. See various papers on this discovery in Ann. d. Ch. und Ph. cxiii. Ch. N. ii. iii. iv. A. D. Circ. v. 81, 233. A. J. Ph. ix. 162, 228, x. 67.

POTASSIUM.

Preparation. Greville Williams obtains the metal by means of sodium at the boiling point of caoutchine 171°C. Ch. N. iii. 21. See also the paper by J. A. Wanklyn in Ch. N. iii. 66.

Liquor potassæ is made by Prof. Redwood without heat; he recommends filtering it through calico. Ph. J. and Tr. ii. 450. A. J. Ph. ix. 241.

Pure potassa is obtained by Fr. Schulze by heating nitrate of potassa with oxide of iron in an atmosphere of hydrogen, and treating with water. Ch. Centralb. 1861, 5. Ch. N. iii. 128.

Chloride of potassium is dimorphous and paramorphous with chloride of ammonium. J. M. Maisch in A. J. Ph. viii. 521.

Iodide of potassium. On the action of various reagents and incompatibles, see G. Ubaldini in Cpt. rend. A. J. Ph. ix. 170. A. D. C. v. 47.

Biniodide of potassium. E. Baudrimont doubts its existence, because sulphide of carbon dissolves all iodine not combined with KI. J. de Ph. 1861, Jan. A. J. Ph. ix. 212. Ch. N. iii. 47. See, however, B. Piffard's paper, who believes in the existence of this compound, in Ch. N. iii. 51.

Carbonate of potassa. Dr. J. J. Pope regards KO,CO_2+HO to be the formula of the crystallized salt, which in contact with

the atmosphere rapidly absorbs ½ aq. and with little more becomes liquid. Sitzungsb. d. Acad. zu Wien. xli. 630. A. J. Ph. 532.

SODIUM.

Chloride of sodium. Rich. V. Tuson observed it in needle-shaped crystals, for the formation of which he thinks organic matter to be necessary. Ch. N. ii. 742.

It is consequently paramorphous with the chlorides of potassium and ammonium.

Carbonate of soda. For its preparation in the pure state from soda, see the papers of W. Lienau in Arch. d. Ph. cv. 271. A. J. Ph. ix. 317. A. D. Circ. v. 133, and of F. T. Jordan in N. Rep. x. 133. A. J. Ph. ix. 404.

The process recommended by H. N. Draper for preparing the dry salt by heating the bicarbonate to redness (Ch. N. iv. 19, A. J. Ph. ix. 531) has been long in use for obtaining it for analytical purposes; see Fresenius' qualitative analysis, 5th edit. p. 44.

Sulphate of soda. Terreil has again experimented with supersaturated solutions without being able to discover the causes of their occasional sudden crystallization. Rép. de Ph. xvii. 233. Ch. N. ii. 263.

Hyposulphite of soda yields according to J. Milton Sanders, with AgI and AgCl compounds, which show in polarized light a most gorgeous display of colors. A. D. Circ. v. 105.

AMMONIUM.

Ammonia. Marguerite and De Sourdeval have succeeded in transforming the nitrogen of air into ammonia through the agency of carbonate of baryta; cyanide of barium being formed, it is decomposed by steam and eliminates all nitrogen as ammonia. See Ch. N. ii. 220. A. D. Circ. v. 233. A. J. Ph. ix. 546.

Liquid ammonia has, according to Prof. Jolly's experiments, a specific gravity of 0·6234 at 0° C., and the gas of 0·558 to 0·676. Ann. d. Ch. und Ph. cxvii. 181. Ch. N. iv. 150. A. J. Ph. ix. 403.

Concentrated ammonia heated to boiling with a rapid current of oxygen passed through it, yields two inflammable gases, which

burn with the greenish yellow color of ammonia. Ann. d. Ch. und Ph. xxxix. 285.

Delardin has studied the effect of ammonia upon the metallic chlorides, and reported to the Chem. Soc. of Paris. Bull. de la Soc. An abstract in Ch. N. iv. 135.

Iodide of ammonium. Dr. Murray Thomson proposes to decolorize it while drying with a little gaseous sulphuretted hydrogen, the quantity of sulphur thus introduced being very minute. Ph. J. and Tr. ii. 547. A. J. Ph. ix. 346.

Sulphate of ammonia dissolves according to Dr. A. Vogel, Jr., at ordinary temperature in 1·3 p. water. N. Rep. x. 9. A. J. Ph. ix. 406.

LITHIUM.

Lithia was found by Salm-Horstmar in fertile soils. Pogg. Ann. A. D. Circ. v. 81. A. J. Ph. ix. 222.

The atomic weight of Li is according to Dr. Karl Diehl 7·026. Ann. d. Ch. und Ph. cxxi. 93. Ch. N. v. 139.

See a paper on lithium and its salts in Ph. J. and Tr. ii. 230. A. J. Ph. ix. 75.

BARIUM.

Carbonate of baryta is obtained pure by Brunner, by heating a mixture of 2 p. chloride of barium, 1 part anhydrous carbonate of soda and 2 parts table salt; it is very easily washed. See Arch. d. Ph. civ. 65.

CALCIUM.

Preparation. Caron obtains the metal by fusing chloride of calcium, zinc and sodium. Cpt. rend. l. 547. A. D. Circ. iv. 286, v. 59.

Reactions. Ch. Méne considers ammonia salts generally as the chief solvents of lime in natural waters; in their presence the only reliable reagent is an oxalate; carbonate of lime is dissolved by chloride of ammonium. Cpt. rend. li. 180. Ch. N. ii. 107.

Hypochlorite of lime, after having been subjected to great pressure, is, according to Bareswil, less prone to decomposition. Rép. de Chim. liv. 350. Ch. N. ii. 31.

On the decomposition of chlorinated lime, see some observations by Prof. Hofmann. A. J. Ph. ix. 72. A. D. Circ. iv. 319, and by Dr. F. L. Phipson in Ch. N. ii. 262.

Chlorinated lime and the solvent action of water upon it has been studied by Fresenius, who regards its composition to be: $CaO,ClO+CaCl,2CaO+4aq$. Ann. d. Ch. und Ph. xlii. 317. A. J. Ph. x. 260. A. D. Circ. v. 235.

$CaCl+2CaO,CO_2+6aq$. This double salt was observed by J. Fritsche. See A. J. Ph. ix. 407.

Sulphate of lime, as Dr. J. Diehl observed, is readily dissolved by hyposulphite of soda. This reaction is useful for its qualitative recognition beside strontia, and for its quantitative estimation in presence of baryta. Jahresb. d. phys. Ver. zu Frankf.

Sulphite of lime is prepared by Anthon, by saturating hydrated lime with gaseous sulphurous acid. A. D. Circ. v. 81.

Hypophosphite of lime. Gérard Janssen heats in a long-necked flask, contained in a sand bath, 1 p. hydrated lime with 8 parts of water, containing $\frac{1}{8}$ alcohol, and adds the phosphorus in small pieces at a temperature of 50° to 60° C. Rép. de Chim. Ch. N. iv. 312. A. J. Ph. x. 162.

A new metal of this group was announced by F. W. and A. Dupré in some of the London waters. Wm. Crookes, however, has shown that the blue line in the spectrum, upon which they based their opinion, belongs to calcium. See Ch. N. iii. 116, 129.

MAGNESIUM.

Schmitt observed that magnesium introduced into a flame produces an intense light; he has constructed a magnesium lamp. A. D. Circ. iv. 289.

CERIUM, DIDYMIUM, LANTHANIUM.

For researches on these earths and their separation, we have to refer to the essays of Stass in J. f. prakt. Ch. lxxix. 257, Ch. N. ii. 196, of Czudnowicz in ibid, lxxx. 16, and ibid, ii. 208, and of R. Hermann in Ch. N. iv. 72.

ZIRCONIUM.

Marignac has investigated the fluorides, and regards the formula of Zirconia as ZrO_2, and the equivalent weight 44·68, given by Berzelius, as too low; 45 is nearer to the facts. See Ch. N. ii. 335.

ALUMINIUM.

On the working of aluminium, see a lengthy paper in Ch. N. 1861, A. J. Ph. ix. 552, and on its crystalline alloys, Michel's researches, published in Ann. d. Ch. und Ph. xxxix. 102, Ch. N. ii. 323, A. J. Ph. ix. 220.

Aluminia, according to Alex. Mitscherlich, dissolves after incineration in a short time in a mixture of 16 p. sulphuric acid and 6 p. water. Ferric oxide behaves similar. Archiv d. Ph. civ. 22.

Soda alums are crystallized by Gentele, from a mixture with potassa alums after the latter have crystallized, by pouring a layer of alcohol on the surface. The chromic soda alum is green, the ferric soda alum colorless. J. f. pr. Ch. xxxii. 56. A. D. Circ. v. 129.

HEAVY METALS.

MANGANIUM.

Permanganic acid. Phipson's assertions of the non-existence of this acid (A. J. Ph. viii. 320) have been disproved by Hermann Aschoff, Arch. d. Ph. civ. 141, A. J. Ph. ix. 315, 557, and by Machuca, Compt. rend. 1860, Juill.

Permanganate of potassa is prepared by Bœttger by fusing in an iron crucible 4 p. hydrate of potassa with 2 p. chlorate of potassa, and stirring in 1 p. binoxide of manganium, when oxygen begins to be evolved. Zeits. f. Ch. und Ph. iii. Ch. N. iv. 69.

Béchamp dries rapidly a mixture of 10 p. binoxide with 12 p. fused potassa, and oxidizes it in a stone-ware retort by pure oxygen. See A. D. Circ. v. 59.

Manganate of soda, NaO,MnO_3+10aq. is obtained by J. G. Gentele by heating for a considerable time equal parts of binoxide of manganium and nitrate of soda. J. de Ph. et de Ch. xxxix. 473. But Wœhler states that the nitric acid is evolved before the formation of the manganate is attained. See A. D. Circ. v. 235.

Sulphate of manganous oxide is prepared by Delffs by treating the binoxide with gaseous sulphurous acid which dissolves not a trace of iron. Zeits f. Ch. und Ph. iii. A. J. Ph. x. 35.

IRON.

On iron reduced by galvanism, see H. Krämer's remarks in Arch. d. Ph. cv. 284. A. J. Ph. ix. 318. This deposit in the presence of ammonia salts contains a small proportion of ammonium. See as before, and D. Meidinger in A. J. Ph. x. 332. A. D. Circ. vi. 90.

E. J. Reynolds observed, that iron containing carbon, but neither pure iron nor when containing nitrogen, yields a volatile oleaginous body, heretofore observed. Ch. N. 1861, July. A. J. Ph. x. 75.

When plunged into nitric acid and withdrawn, Saint Edme observed that the iron, after the adhering acid has been separated, is not further attacked by the acid until after it has been rubbed. Compt. rend. li. 507.

Ferruretted hydrogen, which Prof. Ch. A. Cameron stated did not exist, was prepared by Carius and Wanklyn in the form of a black powder. Ann. d. Ch. und Ph. cxx. 69. Ch. N. v. 158.

Steel and *cast iron* contain nitrogen. Frémy confirms Caron's observations, and suggests the nitrogen to be present as a compound radical resembling cyanogen. Compt. rend. Ch. N. iii. A. D. Circ. 156, 185; but Caron believes it to be in combination with silicon or titanium Cpt. rend. li. 938. Ch. N. iii. 20.

Protosalts of iron possess considerable deoxidizing power, see C. W. Hempel's account in Ann. d. Ch. und Ph. xxxi. 97. A. J. Ph. ix. 217.

Persulphate of iron is substituted by Bacco for nitric acid in Bunsen's battery, whereby he is relieved of much of the disagreeable smell. Rép. de Chim. xl. 354. Ch. N. iii. 31.

F. Pisani observed that acetic acid, with an excess of oxalate of ammonia added to neutral ferric salts, causes no coloration and prevents the precipitation by phosphate of soda. Cpt. rend. Ch. N. iii. 257.

NICKEL.

S. Cloez has made researches on obtaining a pure nickel. For the process we have to refer to Arch. d. Ph. cvii. 310.

ZINC.

To prevent its oxidation on remelting, Milroy fuses it by gas, burned by compressed air. Ch. N. ii. 240.

C. W. Elliot and F. H. Storer found lead, copper, iron, sulphur, charcoal, and minute quantities of arsenic, in some of 11 samples of zinc examined. See Am. J. Ph. viii. 402.

The insoluble matter remaining on dissolving zinc in sulphuric acid, was found by G. E. Rodwell, to be sulphate of lead, with some carbon and iron. Ch. N. iii. 4.

Oxide of zinc may be obtained pure, according to Brunner, by heating 2 p. sulphate of zinc with 1 p. anhydrous carbonate of soda, and washing with water. Arch. d. Ph. civ. 65.

The oxide is recommended by Pohl for polishing glass for optical instruments. Ann. d. Phys. & Ch. cx. 201. Ch. N. iii. 15.

CADMIUM.

The equivalent weight of cadmium was determined by Lenssen, from the oxalate, and found to be 56. J. f. prakt. Ch. lxxix. 281. Ch. N. ii. 287.

Sulphate of cadmium may be prepared in a short time by decomposing a solution of sulphate of copper with cadmium. Rép. de Ph. A. J. Ph. x. 240.

Dr. Wood's fusible alloy consists of 7 to 8 p. bismuth, 1 to 2 p. cadmium, 2 p. tin, and 4 p. lead; it fuses between 150 and 160° F. See also, accounts of his alloys with other metals, malleable and brittle, in A. D. Circ. v. 63, 175. A. J. Ph. ix. 128, 148, and the paper by Lipowitz, in Dingl. Journ. clviii. 271, 376. A. J. Ph. ix. 356.

COPPER.

Levol found that a minute quantity of bismuth almost entirely destroys the ductibility of copper. Ch. N. ii. 179.

Oxide of copper for topical applications is prepared by Vogel and Reischauer, by adding ammonia to nitrate of copper until the precipitate is dissolved, then adding the same quantity of the coppersalt and boiling in a sand bath. Ch. N. ii. 295.

Carbonate of copper, precipitated by sesquicarbonate of soda, is $2CuO,CO_2+aq.$ according to F. Field; on boiling with the al-

kaline solution, it loses water and turns black, carbonic acid being gradually given off after several hours boiling. By boiling in distilled water, it changes to oxide in a few minutes. Ch. N. ii. 279.

Aich's metal possesses a high degree of tenacity; it consists of 60 copper, 38·20 zinc, and 1·80 iron. Dingl. Journ. clviii. 273.

On the alloys of copper and zinc, see an interesting paper by F. H. Storer, in Ch. N. ii. 303.

Sulphate of copper is, according to Bacco, freed from all traces of iron by digesting with freshly precipitated carbonate of copper. Mon. Indus. 1861. N. Jahrb. d. Ph. xvii. 156.

LEAD.

D. F. Crace Calvert has convinced himself by experiments, that soft water, passing through lead pipes, or remaining in contact with tinned lead pipes, dissolves sufficient lead to become poisonous. Ch. N. iv. 172. A. D. Circ. v. 232.

Deutoxide of lead. Boettger prepares it from acetate of lead, by boiling with solution of chlorinated lime. Ch. N. ii. 305. The same process was published by Prof. F. F. Mayer, in Am. J. Ph. 1856, 410.

Iodide of lead is prepared by W. Lienau, from iodine, by combining it as the first step, with iron. Arch. d. Ph. cv. 273.

White lead prepared by corroding lead in beds with acetic acid, contains variable proportions of hydrated oxide of lead. W. Baker has made several analyses. Ch. N. iv. 74.

TIN.

Bichloride of tin possesses solvent properties, strikingly analogous to bisulphide of carbon. Cpt. rend. li. 1097. A. J. Ph. ix. 214. A. D. Circ. v. 88.

CHROMIUM.

Magnetic chromic oxide was obtained by Geuther, in crystals. Its formula is $2Cr_2O_3, CrO_3$. Ann. d. Ch. & Ph. cxviii. 61. Ch. N. iv. 11.

Chromic chromate, according to Vogel, jun., is precipitated as

a brown powder, on exposing bichromate of potassa with ammonia, or with alcohol to the light. Ch. N. ii. 179.

A supersulphide of chromium of the composition Cr_2S_7 is mentioned by Dr. Phipson. See Ch. N. iv. 125.

TUNGSTEN.

E. Blomstrand describes several chlorides and bromides of tungsten. J. f. prakt. Ch. lxxxii. 408. Ch. N. iv. 163.

Tungstic acid, according to Scheibler, exists in two modifications. The soluble variety, metatungstic acid, produces white floccules with the nitrogenous bases. 1-200,000 quinia is rendered distinctly turbid, and separates a precipitate after 24 hours. Drugg. ii. 163.

MOLYBDENIUM.

Molybdic acid, according to Müller, colors turmeric paper brownish red, similar to boracic acid. Ch. N. ii. 192.

Phospho-molybdate of ammonia, dried at 212° F., contains 3·577 NH^4O, 3·962 PO_5 and 92·461 MoO_3. See A. J. Ph. ix. 112.

DIANIUM.

Kobell's new metal (A. J. Ph. viii. 425), is considered by Deville, Damour, and by Hermann, a modification of an acid of niobium. Cpt. rend. liii. 1044.

ARSENIC.

Arsenious acid, it was observed by Cap, forms with 1 equiv. glycerine a viscous oil, solidifying at 32° F. Ph. J. & Tr. iii. A. J. Ph. ix. 570.

The arsenious acid of Andreasberg, contained, according to Dr. Streng, 1·68 SbO_3. N. Rep. x. 36. A. J. Ph. ix. 407.

Iodide of arsenic. After fusing iodine and arsenic in a retort, J. Ncklés crystallizes the compound from bisulphide of carbon. When the solution begins to separate brown crystals, it is digested with some arsenic. J. de Ph. et de Chim. xxxvi. 161.

Hydrargyro-iodide of arsenic is made from 790 grs. iodine, 470 arsenic and 101 mercury, by rubbing them together with a little alcohol. See A. J. Ph. ix. 411.

$AsCu_6$ is, according to Leppert, the grey crust separated by copper from muriatic acid containing arsenic. A. D. Circ. v, 82. A. J. Ph. ix. 408.

ANTIMONY.

Antimoniate of potassa is prepared by A. Reynoso, by oxidizing a solution of antimonic oxide in potassa, by means of permanganate of potassa. See A. J. Ph. ix. 111.

Iodide of antimony according to Schæffer, yields doublesalts when added to hot saturated solutions of alkaline iodides. Poggend. Ann. cix, 611. Ch. N. ii. 143. A. J. Ph. viii. 559.

$2SbCl_5$ and CS_2 according to Prof. Hofmann, decompose to form $CCl_4+2SbCl_3$ 2S. Ann. d. Ch. und Ph. xxxix. 264.

BISMUTH.

Oxide of bismuth boiled with solutions of sesquioxides, yields insoluble compounds as ascertained by Lebaigue. J. de Ph. and de Ch. Ch. N. iii. 147.

A new *Oxychloride of bismuth*, $Bi_2Cl_3,2Bi_2O_3$ has been obtained by Lebaigue. J. de Ph. et de Ch. xxxix. 108. Ch. N. iv. 33.

Iodide of bismuth. Lindau has prepared several double salts of this iodide with the iodides of positive metals. Pogg. Ann. cxi. 240. Ch. N. iv. 225.

Subnitrate of bismuth. To obtain it free from arsenic, Béchamp and St. Pierre fuse the metal with 2·5 to 5 per cent. of zinc for one hour, keeping some charcoal in the crucible. The previous crystallization of the ternitrate was recommended already by Duflos. See Ch. N. iii. 31.

An alloy of 375 tin, 55 nickel, 50 antimony, and 20 bismuth, is recommended by Traluc, of Nismes, as a substitute for silver; it resists the action of vegetable acids. Cosmos. A. J. Ph. x. 377.

MERCURY.

Prof. Mallet confirms Stromeyer's observations of the volatility of mercury at comparatively low temperatures with the vapors of water. A. J. Sc. and Arts. xxx. 124.

Vermillion. See a paper on its manufacture, by M. Firme-

nich in Polyt. Centr. 1861. A. J. Ph. x. 167. Compare also A. D. Circ. iv. 252.

On the reactions of corrosive sublimate, see a paper by J. G. Wormley of Columbus, Ohio, in Ch. N. ii. 181, 193.

SILVER.

Lazar Berlandt purifies silver by precipitating its neutral solution in nitric acid with ferrous sulphate. Arch. d. Ph. cv. 279. A. J. Ph. ix. 318.

Silver is best separated from galena by fusing it with table salt and chloride of lead, and skimming off the chloride of silver. See Ch. N. ii. 239, iv. 70.

On the amount of lead contained in silver coins, see a paper by Eliot and Storer in A. J. Ph. ix. 335.

An alloy of one-third silver, 25 to 30 per cent. nickel and 37 to 52 per cent. copper was found by Rualz and DeFontenay to be useful for small coins and many industrial purposes as a substitute for silver. Ch. N. iv. 42. A. D. Circ.

Nitrate of silver. Lienau precipitates the impure solution by fresh chlorine water and reduces the silver by copper wire. Arch. d. Ph. cvi. 27. A. J. Ph. x. 368.

Greiner precipitates the impure solution by sulphate of soda, decomposes the precipitate by nitrate of baryta, and evaporates the solution. J. de Ph. et de Ch. Ch. N. iv. 98. Lead, we think, cannot be separated in this way.

The purity of nitrate of silver is approximately ascertained by burning it embedded in a cork and weighing the spongy silver. A. D. Circ. iv. 249.

Dr. Squibb's test for the same purpose (see Proc. Am. Ph. Ass. 1859) is objected to by Barnard S. Proctor as not detecting the nitrates of ammonia, alumina, magnesia, manganium, zinc, lead, tin and mercury. Ch. N. ii. 154.

As nearly all these nitrates are decomposed when evaporated to dryness or exposed to the temperature of fusing nitrate of silver, they are not likely to be present in the moulded nitrate, and several on account of their deliquescence cannot be used for adulterating the granulated salt, or the crystals.

GOLD.

Terchloride of gold, obtained by evaporating the solution in aqua regia, is stated by Fordos to have the composition $AuCl_3$, $HCl + aq$. Rép. de Chem. liv. 373. Ch. N. iii. 111.

On the reaction of terchloride of gold in the presence of tin, see a paper by Dr. Witting, sen., in Arch. d. Ph. civ. 279. A. J. Ph. ix. 316.

PLATINUM.

On the metals associated with platinum see a lengthy essay by Prof. Walcott Gibbs in Am. J. Sc. and Arts. No. 91; also by Dr. C. Claus in Ch. N. iii. 194.

Dr. Phipson observed crystalline scales of platinum on leaving the metal in contact with aqua regia for several months; Alfred Noble the same, after boiling for some hours. Ch. N. v. 144, 168.

Dullo observed that platinum in lumps, dissolving very slowly in nitro-muriatic acid, will dissolve rapidly if the pressure is increased. J. f. prakt. Ch. lxxviii. 369.

ORGANIC CHEMISTRY.

The arrangement of the subjects belonging under this head, has been based upon the practical and scientific classification of the organic compounds, laid down in Schlossberger's Lehrbuch der organischen Chemie.

1. *Carbonitrogen Compounds.*

Hydrocyanic acid. E. Milton published some researches on hydrocyanic acid and its changes into a solid black substance, which he considers depending on the presence or the formation of ammonia. J. de Ph. et de Ch. xli. 48.

Cyanide of barium. On some of the uses to which this salt may be applied consult Prof. R. Wagner's paper in N. Report. x. 131. A. J. Ph. ix. 403.

Cyanides of osmium, rhodium, iridium and *platinum*, and some double cyanides have been prepared and studied by Dr. C. A. Martius. Ann. d. Ch. und Ph. xli. 357.

Ferrocyanide of potassium. An interesting paper on its manu-

facture by R. Hofmann, is contained in Ann. d. Ch. und Ph. cxiii. 81. Ch. N. ii. 335.

Ferridcyanide of potassium may, according to F. Reindel, be formed by oxidizing the ferrocyanide by binoxide of manganium. See A. J. Ph. ix. 217.

Ferrocyanide of iron, appears from A. Duncan's experiments to enter into a soluble compound with oxalate of ammonia. Ch. N. 1861. A. J. Ph. ix. 363.

Both ferro- and ferridcyanide of potassium when boiled with nitric acid yield oxalic acid. Berthelot in Ann. Chim. et phys. lxi. 458.

2. *Organic Acids.*

Formiate of baryta, prepared with acid obtained from starch, yields righthanded, with the acid from oxalic acid, left-handed, and with the acid from glycerine mostly right-handed hemihedral crystals. Pasteur in Ann. de Phys. et de Ch. cxiii. 493. Ch. N. iv. 310.

Acetate of soda. C. F. Reischauer has ascertained the circumstances under which its different hydrates are produced. Ann. d. Ch. und Ph. xxxix. 116. A. J. Ph. ix. 220.

Acetic acid is, according to C. Grimm, one of the products of the dry distillation of American turpentine. See A. J. Ph. ix. 113.

Butyric acid. Pasteur observed that the ferment for this acid is an infusorial animal living without free oxygen. See interesting details in Rép. de Ph. xvii. 363. A. D. Circ. v. 156.

Oenanthic acid, according to A. Fischer, is a mixture of caprinic, caprylic, and other volatile fatty acids. Ann. d. Ch. und Ph. xxxix. 247. xlii. 307. A. J. Ph. ix. 312. A. D. Circ. iv. 281.

Cinnamates and *nitro-cinnamates*, have been described by E. Kopp in Cpt. rend. liii. 634. Ch. N. iv. 334. A. J. Ph. x. 186.

Oxalic acid, dried over sulphuric acid becomes anhydrous, according to Erdmann. J. f. prakt. Ch. lxxv. 4. A. J. Ph. ix. 114.

Oxalate of copper, is precipitated by oxalic acid as a greenish blue powder $C_4Cu_2O_8$+aq.; it is insoluble in dilute acids and yields with ammonia blue crystals. J. f. pr. Ch. lxxv. 25. Ch. N. ii. 191.

Ferrous oxalate. Phipson stated it to be a quadroxalate

$FeO,4C_2O_3$ (Cpt. rend li. Ch. N. ii. 251.) In Ch. N. iii. 349, he gave the following formula: $FeO, 3C_2HO_4 + aq$. But Prof. Croft of Toronto shows in Can. J. Sc. xxxi. 18, Ch. N. iv. 309, and Emerson Reynolds in Ch. N. v. 17, that it has the composition found by Rammelsberg, FeO,C_2O_3+2aq.

Succinic acid. The chelidoninic acid of Zwenger is, according to Prof. Walz, succinic acid, formed by the deoxidation of malic acid by sulphuretted hydrogen. N. Jahrb. d. Ph. xv. 22. A. J. Ph. x. 328.

Lactic acid, or lactate of lime treated with fumigating sulphuric acid, yields according to A. Strecker, methionic acid, the same which is produced from sulphacetic acid under the same circumstances. Ann. d. Ch. und Ph. xlii. 290.

Propionic acid has been converted by Friedel and Machuca into lactic acid. Comp. rend. liii. 406. Ch. N. iv. 290.

Kolbe in Ann. d. Ch. und Ph. cxiii. argues that lactic acid is monobasic, while Wurtz in Ann. de Chim. et Phys. lix. considers it bibasic. See Ch. N. iii. 7·9. Also a paper by W. H. Perkins on its molecular constitution in Ch. N. ii. 81.

Tartaric acid, reduces ferric chloride in the light; Poitevin has made use of this property in photographic printing. Rép. de Ph. xvii. 317.

Bitartrate of potassa. Its solubility in acids and saline solutions was ascertained by Dr. Tanner of Bern, with the view of obtaining pure tartrates. Schweiz. Zeits. f. Ph. vi. 160. A. J. Ph. x. 39.

Tartrate of lime. See a practical paper on the uses to which this compound may be put, by W. Lienau in Arch. d. Ph. cv. 275.

Malic acid has been obtained by Kekulé, by deoxidizing bromosuccinate of silver. (Ch. N. 1860, April, 244). Perkins and Duppa obtained tartaric acid from the bibromosuccinate. The close relation of the three acids was thus established. Ann. d. Ch. und Ph. xli. 120. Pasteur, however, declares, and Kekulé corroborates it, that the above tartaric acid is racemic acid. Rép. de Chim. pure ii. 419.

Dessaignes found malic acid in the mother liquor of tartaric acid, prepared by oxidizing succinic acid with phosphorus and iodine. Rép. de Ph. xvii. 197.

See also Succinic Acid.

Kinic acid. Recent investigations by Zwenger and Siebert make it probable that this acid occurs in all plants yielding kinone with sulphuric acid and binoxide of manganium. Ann. d. Ch. und Ph. Suppl. i. 84.

Veratric acid. W. Merck has investigated its derivatives resulting from the treatment with nitric acid and with baryta. Ann. d. Ch. und Ph. xxxii. 58. A. J. Ph. ix. 115.

Piperic acid. A. Strecker obtained from it with fusing potassa, oxalic, acetic, carbonic and pyrocatechuic acid. Ann. d. Ch. und Ph. xlii. 280.

Tannic acid. Prof. Bolley regards the heavy liquid obtained in the preparation of tannin, as a probable compound of it with ether. Ann. d. Ch. und Ph. xxxix. 63. A. D. Circ. v. 106. A. J. Ph. ix. 219, 337. The same suggestion has already been made in Parrish's Practical Pharmacy, 2d edit. 377. See remarks by E. Parrish, in A. J. Ph. ix. 207.

Dr. R. Luboldt states that the 3 stratæ obtained with ether, tannin and water are—1, a solution of ether in hydrated tannin; 2, of hydrated tannin in water containing some ether; and 3, of hydrated tannin in ether containing some water. The first and last contained in preparing tannin from galls, also fat, resin, gallic and ellagic acids. J. f. prakt. Ch. lxxvii.

On some varieties of tannin, see a paper by Dr. J. Stenhouse in Ph. J. and Tr. x. 252.

Urate of soda. Dr. Baumgarten of St. Louis, obtained it in microscopic transparent globules. See his process in Ann. d. Ch. und Ph. xli. 106. A. J. Ph. ix. 402.

Fulminic acid. Its rational formula is given by Chickhoff as $C_2(NO_2)_2H_4(CH)_2$. Cpt. rend. li. 99. Ch. N. ii. 94.

Fulminate of mercury is made by Stahlschmidt by dissolving 6 p. lignone in 4 p. water, and adding a solution of ½ p. mercurous nitrate in 3½ p. water, then 5 p. nitric acid. Heat is applied until gas begins to be disengaged, when the reaction proceeds spontaneously. Ann. d. Phys. und Ch. cx. 547. Ch. N. ii. 328.

3. *Alcohols and Derivatives.*

a. MONOATOMIC ALCOHOLS.

Alcohol. Baumhauer has again ascertained the specific gravity

of alcohol of different strength at 15° C., and obtained results somewhat differing from those of Pouillet. (Ann. d. Ch. und Ph. xl. 253,) but closely agreeing with Meissner's, as published in Gmelin's Handbook. Pouillet afterwards showed that there is scarcely any difference if the contraction is taken into account. Cpt. rend. li. 1002.

E. C. C. Stanford found that alcohol permeates animal bladder, and becomes weaker instead of stronger as hitherto supposed. Ch. N. iii. 143. A. D. Circ. v. 203.

V. de Luynes discovered a compound probably $C_4H_6O_2,As Cl_3$ which distils from an alcoholic solution of chloride of arsenic at 148° C. Cpt. rend. li. 831.

Fermentation. Pasteur has continued his experiments previously noticed. The germs are derived from the air, and live upon albuminous matters, which nutriment is suitable for several kinds, thus complicating the phenomena. The coagulation of milk is due to animalculæ. Cpt. rend. A. J. Ph. ix. 165.

Prof. Van den Broek claims priority for many of Pasteur's discoveries on fermentation. Ann. d. Ch. und Ph. xxxix. 75. A. D. Circ. iv. 320.

J. C. Leuchs found that precipitated silicic acid produces fermentation, Dingl. Journ. clxi. 400. A. J. Ph. x. 32, and that the presence of sulphur causes the disengagement of sulphuretted hydrogen. A. D. Circ. v. 203. A. J. Ph. x. 90.

Herman Hoffman in studying the nature of ferments, observed that some of the sporules in a dry state will bear the heat of boiling water, but are unavoidably destroyed in the presence of water, upon which behaviour rests the success of Appert's method' for preserving organic matter. Ann. d. Ch. und Ph. xxxix. 228.

Ether according to Leuchs is formed when alcohol, sugar and water are simultaneously present in porous bodies. Ch. Centralbl. 1861, 385. A. D. Circ. v. 203. A. J. Ph. x. 45.

Saturated with iodine, J. M. Maisch observed that ether separates the water held in solution. A. J. Ph. viii. 524.

Nitrate of ethylic oxide. Carey Lea has modified Millon's process: he uses nitric acid sp. gr. 1·401, and alcohol, of each 250 grms., urea 33 grms.; but very little urea is consumed.

Nitrite of ethylic oxide. The same author employs 90 CCm. nitric acid sp. gr. 1·37, 150 CCm. 90 per ct. alcohol and 45 grms. ferrous chloride. See Am. J. Sc. and Arts, 1861, Sept. A. D. C. v. 222. A. J. Ph. x. 69.

The same author has also an essay on the effects of reducing agents upon the former ether in A. J. Sc. and A. Ch. N. iv. 230.

Hydrobromic and *hydriodic ethers* are prepared by J. Personne with the employment of amorphous for normal phosphorus. Ch. N. iii. 344.

Acetic ether is separated by W. Engelhardt from the distillate by neutralizing with magnesia, mixing with water and saturating with chloride of sodium. A. J. Ph. ix. 411. A. D. Circ. v. 171.

Aldehyde. Lieber announces a modification boiling at 123° to 124° C. Sitzungsber. d. Akad. zu Wien. li. 649. Ch. N. iv. 226.

Acetylene. C_4H_2 was discovered by Berthelot in the gases resulting from the passage of alcohol, ether or aldehyde, through a red hot tube. Cpt. rend. l. 805.

Pure methylic alcohol, or wood naphtha, is obtained by Carius by digesting benzoate of methylic oxide with soda. A. D. Circ. v. 7.

Iodoform. Gilm found that cyanogen has very little influence upon it. Ann. d. Ch. und Ph. xxxix. 46. A. J. Ph. ix. 219.

Chloroform. On its preparation see the observations of Mich. Pettenkofer in N. Repert. x. 103. A. J. Ph. ix. 421. A. D. Circ. v. 202, and of B. Hirsch in Arch. d. Ph. cvii. 137. A. J. Ph. x. 42.

Amylic oxide was prepared and its properties studied by A. Bauer. Cpt. rend. l. 500. Ann. d. Ch und Ph. xxxix. 89.

Amylic alcohol. Fusel oil, is purified by B. Hirsch by distillation with water. N. Repert. x. 294. A. J. Ph. x. 139, 328.

Benzine. On the various uses to which benzine may be applied, see Drug. June, 1861. A. J. Ph. ix. 367.

Nitrobenzole. The mode of its preparation on the large scale is described by E. Kopp. Ch. N. 1860. A. J. Ph. ix. 133.

Commercial creasote according to M'Fairlie and Srugham is a

mixture of two homologous bodies, the hydrated phenylic oxide $C_{12}H_6O_2$, and hydrated cresylic oxide $C_{14}H_8O_2$. Ch. N. 1860, Aug. 11.

b. TRIATOMIC ALCOHOLS.

Glycerine from cocoanut oil is identical with ordinary glycerine, notwithstanding the difference in some of its properties. Prof. Hofmann in Quart. J. Ch. Sc. A. D. Circ. iv. 319.

Dr. Erlenmeyer observed that glycerin yields with hydriodic acid, according to the proportions employed, the iodide of allyle or propyle. N. Jahrb. f. Ph. xvi. 290. A. J. Ph. x. 332.

Nitroglycerine or glonoine. J. P. Liebe publishes a process for obtaining it without difficulty. It is to be kept under water or diluted with alcohol. Arch. d. Ph. civ. 282. A. J. Ph. ix. 313. A. D. Circ. iv. 338.

Sobrero gives in Monit. Scient. Rép. de Ph. xviii. 431, as his own, precisely the same process, only substituting measures for weights.

A notice of its explosive properties, by Ch. E. Ferris, is contained in A. J. Ph. viii. 525.

Appended: *Volatile Oils and Resins.*

Oil of turpentine, evaporated with nitric acid, and the residue subjected to dry distillation, yields according to H. Schiff, nitrobenzine between 200 and 210° C. Ann. d. Ch. cxiv. 201. A. D. Circ. iv. 201.

Oil of Citrus Lumia. It is a carbohydrogen $C_{20}H_{16}$, boiling at 180° C. See its properties in Cpt. rend. li. 258. A. J. Ph. viii. 543.

Camphor very slowly sublimed, was obtained by Desaloizeaux, crystallized in hexagonal tables. Compt. rend. xlviii. 1064.

Chlorinated compounds were obtained by L. Pfaundler from the reaction of pentachloride of phosphorus upon camphor. Ann. d. Ch. und Ph. xxxix. 29. A. J. Ph. ix. 218.

Amber camphor, distilled from amber with potassa, is, according to Berthelot and Buignet, $C_{20}H_{18}O_2$, but not identical with Borneo-camphor, its rotating power being different. Cpt. rend. l. 606.

Oil of cajeput, $C_{20}H_{18}+2HO$. Schmidt names it hydrate of cajeputen; he prepared several compounds with halogens and hydracids. Trans. Roy. Soc. Edinb. xx. 360. Ch. N. iv. 124. A. J. Ph. ix. 545.

Oil of cloves. See a notice by Prof. Procter of its manufacture by Crew, Rogers & Crew, who obtain about 16 per ct. A. J. Ph. x. 27.

The behaviour of volatile oils to polarized light has been examined by Dr. R. Luboldt, as one of the means for detecting their adulterations. See A. D. Circ. v. 30.

Buignet has made similar experiment; an abstract of his results is published in A. J. Ph. x. 140.

Stearoptens of parsley water and spirit of juniper were analyzed by J. Wandsleben; the former is $C_{20}H_{14}O_8$, the latter $C_{12}H_{14}O_{12}$. See A. J. Ph. x. 330.

Resin (colophony,) it was discovered by Hunt and Pochin, of Manchester, can be distilled with superheated steam between 400 and 750° F. The first portions are colorless. See A. D. Circ. v. 59.

4. *Organic Alkaloids.*

a. DIAMIDES.

Urea. De Luca removes from the urine all albuminous matter by ammoniated cupric nitrate, and employs the filtrate for the preparation of urea. A. D. C. v. 7.

Carey Lea obtains a larger yield of urea from ferrocyanide of potassium by a modification of Wœhler's process. Am. J. Sc. and A. No. 95. A. D. Circ. v. 222. A. J. Ph. x. 80.

b. TERNARY ALKALOIDS.

Anilina and its sulphate. Prof. Procter publishes a process for obtaining these new remedies from nitrobenzole. A. J. Ph. x. 295.

For its product of oxidation, the anilin-violet, Scheurer-Kestner proposes the name

Phenamina. Dried at 110° C. its composition is $C_{30}H_{14}N_2O_2$ Polyt. Centralb. 1861, 396. Ch. N. iii. 383.

This name is not to be confounded with phenylamina, which is synonymous with anilina.

Nicotina may be prepared by passing tobacco smoke over cotton saturated with tannin. See A. D. Circ. v. 157.

Debize passes steam through a mixture of tobacco and lime, neutralizes with sulphuric acid and treats with an ethereal solution of ammonia. Monit. Scient. A. D. Circ. iv. 351. A. J. Ph. viii. 424.

c. QUATERNARY ALKALOIDS.

Metamorphia is a new alkaloid, discovered by Wittstein in the mother-liquor from the preparation of morphia. For an account of its properties, refer to Wittst. V. Schr. ix. 481. A. J. Ph. ix. 24.

Narcotina. See some remarks on its chemical constitution, by H. M. Noad in Ch. and Dr. 1851, May. A. J. Ph. ix. 366.

Veratria. Dr. Murray Thompson gives a simple process for its preparation in Ch. N. iii. 334. The product most likely, contains sabadillia, though it is pure enough for medicinal purposes.

Aconitia. See the process of Prof. Procter for the medicinal alkaloid in A. J. Ph. ix. 100.

Atropia was found by Ch. R. C. Tichborne to be soluble in 189 p. water, and 25 p. glycerine. An amorphous modification (tropia?) appears to be much more soluble. Ch. N. 1860, Oct. A. J. Ph. ix. 65.

Ludwig and Pfeiffer found, that under the influence of chromic acid it splits into benzoic acid and propylamina. Arch. d. Ph. cvii. 131. A. J. Ph. x. 33.

Solania prepared by Reuling's process from potato germs splits according to Zwenger and Kind, when boiled with dilute acids, into solanidia $C_{50}H_{40}NO_2$ and glucose. Ann. d. Ch. und Ph. xlii. 129.

Quinia. W. Clark suggests a process for its preparation, in which the alkaloid is combined with stearic acid. Lond. J. of Arts, 1860, 94.

Sulphate of quinia. Callond finds its solubility to be in

creased by chloride of ammonium, nitrate of potassa and sea-salt; diminished by sulphate of soda, and of magnesia, and decomposed by bicarbonate and phosphate of soda. Rép. de Ph. xvi. 177. Ch. N. ii. 114.

Urate of quinia is prepared by A. Andreæ, by boiling its constituents in water; it is a crystalline powder, soluble in 855 p. water, 1580 p. alcohol of ·828, and 2125 p. ether of ·730. Wittst. V. Schr. x. 3. A. D. Circ. v. 186.

Dalleochine or quinine green, prepared with chlorinated lime, is of a resinous appearance and green color. A. J. Ph. ix. 407. A. D. C. v. 59.

Cinchonia. Horace Kœchlin publishes some reactions which yield coloring matters. Rép. de Chim. Ph. J. and Tr. iii. 385.

Betacinchonia is a new alkaloid obtained by Willmar Schwabe from commercial chinoidine. Arch. d. Ph. ciii. 273. A. J. Ph. ix. 173, 417.

Cocaina was observed by Losser, to split with acids into benzoic acid and a new alkaloid ecgonia, $C_{18}H_{16}NO_6$. Ann. d. Ch. und Ph. cxxi. 37.

Berberina. L. Henry has an essay on this alkaloid and some of its salts in Bull. de l'acad. roy. belg. A. J. Ph. ix. 257.

Oxyacanthia. Ch. Wacker gives some new investigations on the alkaloid obtained from the mother-liquor of berberina by carbonate of soda and purifying. Witts. V. Schr. x. 177. A. J. Ph. ix. 455.

Corydalia. See new observations by G. Leube, Jr., in Wittst. V. Schr. ix. 524. A. J. Ph. ix. 111.

Buxina is according to Walz, identical with bebeerina. See Mat. Med., Euphorbiaceæ.

Piperina has, according to Strecker, the composition $N(C_{24}H_9O_6+C_{10}O_{10}.)$ Ann. d. Ch. und Ph. xxix. 317. A. J. Ph. ix. 218.

Theobromina in combination with oxide of silver, heated with iodide of methyle, is converted into iodide of silver and coffeina. Ann. d. Ch. und Ph. xlii. 170. A. J. Ph. ix. 406.

General Notices concerning Alkaloids.

Preparation. Von Uslar and J. Erdmann have worked out a process for obtaining poisonous alkaloids, in which their solubility in amylic alcohol is made use of. See A. J. Ph. x. 354.

Reactions of chromic acid on the vegetable alkaloids. We have to refer to the essay in J. de Chim. et de Ph. xli. 341.

Bases from the putrefaction of animal matters are volatile and contain phosphorus and sulphur. Dr. F. C. Calvert is further investigating them. Ch. N. ii. 88. A. D. Circ. iv. 281, v. 55.

Phospho-bases. A long essay on these compounds has been read by Prof. Hofmann before the Roy. Soc. of London, in June, 1860.

5. *Carbohydrates and Allied Compounds.*

a. SUGARS.

Cane sugar. Gélis agrees with Dubrunfaut to regard crystallized sugar as a compound sugar. Heated to 100 or 110° C., it loses 2 equiv., and at 170° 2 more equivalents of water, when it becomes colored, and contains various matters, the greater part being a colored body, not directly fermentable, until changed by dilute acids into glucose. It is a dextrogyre, contains $C_{12}H_{10}O_{10}$, and was named glucosane. Inuline and milk-sugar yield similar compounds. Cpt. rend. li. 331. Ch. N. ii. 179.

Dr. J. J. Pohl heats sugar in an oil bath to between 210 and 215° C., until aqueous vapors cease to rise; alcohol now dissolves assamar and leaves caramel. Sitzungsb. d. Akad. zu Wien. xli. 623. Ch. N. iv. 27.

Schoonbrodt mixes 2 p. cane sugar with 1 hydrate of lime, and 3 p. dry chlorinated lime, and obtains pectic acid; by doubling the hypochlorite, he gains malic acid. Bull. de la Soc. Chim. N. iv. 77. Ch. N. iv. 291.

Anthon found that the property of animal charcoal to remove lime from a saccharine solution, is due to the carbonic acid absorbed in its pores, and that not over ⅔ of the lime is thus precipitated. Dingl. Journ. 1861. A. D. Circ. v. 171.

Milk sugar. The results of observations on the fermentation of milk sugar, instituted by Dr. R. Luboldt, are related in A. D. Circ. v. 158. A. J. Ph. ix. 409.

Glucose. Anthon finds that alcohol of ·837 spec. grav. will dissolve 1·94, of ·880 sp. gr. 8·10, of ·910 sp. gr. 16, of ·950 sp. gr. 32·5 per ct. Chem. Centralb. v. 292. Ch. N. iii. 80.

Berthelot describes some compounds of glucose with stearic, butyric, acetic and benzoic acid and with ether. See Ch. N. iii. 15.

b. SACCHAROIDS.

Inosite. A process for preparing it, by Dr. L. Cooper Lane, of San Francisco, is published in Ann. d. Ch. und Ph. xli. 118. A. J. Ph. ix. 402.

c. PSEUDOSUGARS.

Mannite. By oxidizing with platinum black, Gorup-Besanez obtained mannitic acid $C_{12}H_{12}O_{14}$, a sugar mannitose $C_{12}H_{12}O_{12}$ and an uncrystallizable substance, probably mannitan. A fermentable sugar is likewise obtained by oxidizing mannite with nitric acid at a low temperature. Ann. d. Ch. und Ph. xlii. 257.

Dulcose yields according to H. Carlet, with nitric acid besides oxalic and mucic acid, also racemic acid and probably glucose. Cpt. rend. li. 137.

d. GLUCOSIDES.

The monograph by A. Kromayer on the bitter principles of the plants, which is mentioned in another place, is a most creditable work, containing all the information hitherto obtained by chemists of these compounds, together with many observations made by himself. We refer to this valuable work, and shall omit here the author's investigations.

Phillyrin from Phillyrea latifolia consists according to Bertagnini and De Luca of $C_{54}H_{34}O_{22}$ and splits with acids into phillygenin $C_{42}H_{24}O_{12}$ and glucose. J. de Ph. et de Ch. xxxviii. 356.

Quercitrine $C_{70}H_{38}O_{40}$ splits according to Hlasiwetz with acids into glucose and quercetine, $C_{46}H_{16}O_{20}$, the latter yielding with alkalies again, quercetic acid and phloroglucine. Ann. d. Ch. und Ph.

Quercetine was found by Prof. Bolley in buckthorn berries. See A. J. Ph. Ph. ix. 219.

Fraxine $C_{54}H_{30}O_{34}$ splits according to Rochleder into fraxetine $C_{30}H_{12}O_{16}$ and sugar. J. f. prakt. Ch. lxxx. 173.

Arbutine, according to Strecker yields with chlorine the several chlorides of kinone. Ann. d. Ch. und Ph. xlii.

Kinovine, kinovic bitter. Prof. de Vrij corroborates Hlasiwetz previous results, of the nature of this body, which has been used in the hospitals of Batavia. J. de Ph. et de Ch. xxxviii. 255. Ch. N. ii. 107.

Digitaline, $C_{94}H_{45}O_{30}$ splits according to Kosmann on continued boiling with acids into digitaliretine $C_{30}H_{25}O_{10}$ and glucose. J. de Ph. et de Ch. xxxviii. 5. Ph. J. and Tr. iii. 157. A. J. Ph. ix. 69.

Santonine yields santoniretine $C_{26}H_{18}O_{6}$ and glucose. Even *Guaiacum resin* appears to be a glucoside. J. de Ph. et de Ch. xxxviii. 81. Ch. N. ii. 167.

Daphnine is decomposed by acids into glucose and daphnetine. See C. Zwenger researches in Ann. d. Ch. und Ph. xxxix. 1. A. J. Ph. ix. 325.

Scammonine. See H. Spirgati's investigation of the constitution of the resin of scammony in Ann. d. Ch. und Ph. xl. 289. A. J. Ph. ix. 430.

Myronic acid and myrosin. Ludwig and Lange have again prepared these compounds and examined their behaviour towards each other. Ann. d. Ch. und Ph. 1861. A. J. Ph. ix. 236.

Glycyrrhizine according to Gorup-Besanez is a glucoside, splitting with acids into glycyrretine and a sugar, not obtained in a pure state yet. Ann. d. Ch. und Ph. xlii. 236.

Colchicine, it appears from Prof. Walz' investigation, is no alkaloid; it may probably be a glucoside. N. Jahrb. d. Ph. xvi. 1. A. J. Ph. x. 348.

e. LIGNINE.

Gun cotton. Several reports have been published for obtaining pyroxylin suitable for collodion. We refer here to Arch. d. Ph. civ. 270. A. J. Ph. ix. 316. A. D. Circ. v. 178. Wm. S. Thompson in J. Md. Coll. Ph. and A. D. Circ. v. 187.

Decomposition of gun cotton has again been observed by A. W. Hofmann, see A. J. Ph. ix. 312. A. D. Circ. iv. 319, and by De Luca, Cpt. rend. liii. 298. Bouet states that gun cotton prepared with the acids keeps longer than that prepared with nitrate of potassa. Cpt. rend. liii. 405. A. J. Ph. x. 187.

f. STARCHES.

Starch. Dr. Flückiger has again proved, that a portion of the starch is soluble in water. See Schweiz Zeits. f. Ph. A. J. Ph. ix. 318. A. D. Circ. vi. 5.

Dr. Mohr prepares a solution with chloride of zinc for analytical purposes. A. J. Ph. ix. 312.

Potato starch, it is asserted by C. Puscher, when two weeks old, evolves with a mixture of 2 p. sulphuric acid and 1 water, a disagreeable odor, and may thereby be distinguished from other fecula. Wittst. V. Schr. x. 70.

Iodide of starch is obtained neutral and free from color, according to Duroy, if the blue compound remains in contact with yeast. Ch. N. iii. 16.

Baudrimont states that the blue color disappears when heated on account of the volatilization of the iodine, but may reappear on cooling, from the condensation of it below the surface. No decolorization takes place in a filled glass tube, well sealed. Cpt. rend. 1860, 827. A. D. Circ. v. 185.

On the microscopical and chemico-microscopical characters of starch, see an interesting paper by Jno. Horsley in Ch. N. iii. 162.

Dextrine and *glucose* from starch, are according to Musculus a complete decomposition, not merely a modification of starch. Ann. de Ch. et de Phys. lx. 203. Ch. N. ii. 299.

6. *Chromogenes.*

Chlorophyll. Pfaundler agrees with Salm-Horstmar that

iron is requisite for its formation. Ann. d. Ch. und Ph. xxxix. 37. A. J. Ph. ix. 218.

Fremy states that it consists of phyllocyanine and phylloxantheine. J. de Ph. et de Ch. xxxvii. 241. A. D. Circ. v. 56.

Color of flowers. Filhol has introduced some new names for these coloring principles: xanthogene is contained in white, xanthine and xanthene in yellow flowers, crocoxanthine in saffron, and cyanine, which is red in acid juices, in blue flowers. See A. D. Circ. v. 103.

Carotine. Dr. Aug. Husemann finds its composition $C_{36}H_{24}O_2$; it turns blue by sulphuric and by dry sulphurous acid. The colorless hydrocarotine $C_{36}H_{30}O_2$ is colored bright red by sulphuric acid. Ann. d. Ch. und Ph. xli. 200.

Alizarin. Roussin believes to have obtained it artificially; see Cpt. rend. A. D. C. v. 189. A. J. Ph. ix. 377. Dumas requires the elementary analysis.

Color of wine. Glémard had named it œnolin and found its composition $C_{20}H_{10}O_{10}$. J. de Ph. d'Anv. Arch. d. Ph. cii. 340.

7. *Protein compounds.*

Legumine. Frohde prepares it from ground lentels and obtains 20 per cent. See a description of his process in Erdm. Jour. lxxvii. A. D. C. v. 103.

Oxidized by sulphuric acid and bichromate of potassa, legumin yields benzoic acid, the fatty acids from formic to caprylic, valeronitrile, acetonitrile, &c., while, under the same circumstances,

Gelatine furnishes, besides the fatty acids, hydrocyanic acid, hydruret of benzoyle, and several nitrites. Erdm. Journ. lxxix. 303. Ch. N. ii. 335.

Crystals of a protein compound were observed by Cohn in the cortical cellules lying immediately under the corky envelope of the potato. Journ. f. prakt. Ch. lxxx. 129. Ch. N. iii. 32.

PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY.

The pharmaceutist is frequently called upon by physicians for the examination of calculi, urine and other pathological matters, he must therefore be acquainted with the late discoveries and ob-

servations. These are the reasons why the following notes have received a place here.

1. *Secretions and Structures.*

BLOOD.

The coagulation of human blood, according to Wanner, takes place slowest at a temperature of 37°C. J. de Ph. et de Chim. xxxviii. 350.

Copper, lead and *manganium* must be regarded as being present only from accidental causes, when met with in the blood or animal organism. Béchamp has made observations on this subject. Ann. d'Hyg. et de Méd. legale, 1860, Janv.

Sugar is normally present in the blood of herbivorous animals; Dr. R. McDonnell finds, however, that amyloid substances are not converted into sugar. Dubl. Hosp. Gaz. A. D. Circ. vi. 27.

The toxical effects of *carbonic oxide* are explained by Dr. L. Meyer by the displacement of an equal volume of oxygen from the blood. Zeitschr. f. rat. Med. v. No. 1. Rép. de Ph. xvii. 338.

Effect of phosphorus. Dr. L. Bernatti, of Turin, found in the crural vein of a man who had committed suicide by eating matches, an inflammable gas, burning with detonation and a bluish flame. Kühtze's Not. xxv. 134.

Blood stains. Lesneur and Robin recognized blood upon an old rusty instrument, by scraping off the spot into a slightly alkaline solution of sulphate of soda; after about an hour, blood globules of one of the mammaliæ could be observed under the microscope. Jour. des Conn. A. D. Circ. v. 82.

Guibourt makes some observations and gives instructions of the mode of treating and the reactions from which to recognize blood spots. Journ. de Ph. et de Chim. A. J. Ph. ix. 439.

E. Scriba in connection with Prof. Dr. Simon, prepared hemine crystals from blood stains 40 years old, and mentions the precautions necessary for succeeding in obtaining these crystals. N. Jahrb. d. Ph. xvi. 83. A. J. Ph. x. 331.

BONES, &C.

Prof. Alph. Milne-Edwards has presented to the Paris medi-

cal faculty very important chemical and physiological researches on bones; from his conclusions we extract the following: The osseous substance is the result of a combination of osseine with the lime salts. Gelatine forms a chemical combination with basic phosphate of lime. The carbonate of lime of the bones seems to be a product of decomposition of the phosphate by the liquids of the organism. Contrary to the assertions of Friedleben chondrine and gelatine are two different substances. See Rép. de Pharm. xvii. 99. A. D. C.

Cartilage. Prof. Bœdeker and Dr. G. Fischer have converted hyaline cartilage into sugar through the agency of muriatic acid. Chondrine taken internally increases somewhat the amount of sugar, and considerably the urea in urine. Ann. d. Ch. und Ph. xli. 111.

Human brain, according to Müller, contains a considerable quantity of cholesterin, a neutral body of the formula $C_{34}H_{33}NO_6$, a phosphoretted body, yielding with lead a compound soluble in ether, and fatty acids. Ann. d. Ch. und Ph. xxix. 361. Arch. d. Ph. cv. 77.

Eggs. Filhol believes the coloring matter of the yolk to be analogous to xanthine, and remarks that bile contains a coloring matter showing the same behaviour to reagents. J. Méd. de Toulouse. Rép de Ph. xviii. 188.

MILK.

Hoppe says that milk contains a *ferment* which is destroyed by heat, but formed again through the influence of atmospheric oxygen, and that once begun, it is developed spontaneously without the further assistance of oxygen. Virchow's Archiv. xvii. A. D. Circ. v. 125. Ch. N. ii. 252.

Analysis. Dr. F. Daubrawa precipitates milk with 2 volumes of alcohol of ·833, the precipitate contains the casein butter and insoluble salts; the solution contains sugar of milk and the soluble salts. Milk of 1·03 sp. gr. contains 87·4 per cent. water, or 103 p. contains 90·02 water. One measure of water with two of alcohol sp. gr. ·833 shows a spec. gravity of ·905. This is increased ·004 by 1 per cent. sugar of milk. The butter and

casein are represented by the difference between the specific gravity of the milk multiplied by 100, and the percentage of milk sugar added to the percentage of water. Sitzungsb. der Wiener Akad. Witts. V. Schr. ix. 349.

The butter in milk is estimated by evaporating the milk with half its weight of charcoal, drying, powdering and exhausting with ether. Arch. d. Ph. cii. 379.

The blue color of a cream was found by Dr. E. Reichardt to be owing to a mould. See Archiv. d. Ph. ciii. 25. A. J. Ph. ix. 313. A. D. Circ. iv. 321.

GASTRIC AND BILIOUS LIQUIDS.

Cellulose is digested by sheep as appears from the experiments of Süssdorf and Stœckhardt; with hay, straw, poplar sawdust, pine wood sawdust and paper pulp, the digested cellulose varied between 30 and 80 per cent. See Ch. N. ii. 52.

Cane sugar is in the ileum converted into fruit sugar; sugar is largely absorbed by the stomach, duodenum and small intestines, and in the latter transformed into lactic acid and fruit sugar; the quantity of urea in the urine is decreased, while uric acid increases. See Dr. Kœbner's observations in A. D. Circ. vi. 26.

The gastric juice of dogs from an artificial fistula was found by Marcet to contain pepton resulting from the action of the juice upon the albuminoid substances. Ann. d. Ch. und Ph. cxx. 250.

Cholesterin according to Hugo Schiff assumes a magnificent violet color when cautiously warmed with muriatic or sulphuric acid, containing some ferric oxide. Ann. d. Ch. und Ph. xxxix. 313. A. J. Ph. ix. 312. A. D. Circ. v. 125.

Pettenkofer's test, according to Dr. J. Neukomm may be recognized with a single drop of an aqueous solution of a bilious acid containing only 1-100th per cent., if it is carefully evaporated with a drop of dilute sulphuric acid and a trace of sugar. By combining with lead, decomposing with soda and exhausting with alcohol, he was thus enabled to recognize 1-1000th per cent. of cholic and glycocholic acid in urine. Ann. d. Ch. und Ph. xl. 30.

Tyrosine yields, according to Prof. G. Stædeler by oxidation, a

red coloring matter; treated with chlorine it forms compounds of kinone, methyle and acetyle. Ann. d. Ch. und Ph. xli.

Sarcolactic acid and cholina, both constituents of bile, were experimented with by A. Strecker. J. de Ph. et de Ch. xxxix. 374.

2. *Excretions.*

URINE.

Sugar in urine. Dr. Bence Jones corroborates Brücke's statement of its presence in healthy urine; he obtained 1·4 to 3 grs. from the litre. Ph. J. and Tr. ii. 419. Dr. Vintschgau detected small quantities in the urine of the fox. See Ch. N. iv. 247.

In the urine of a patient suffering with hydrophobia, Prof. C. Bödeker observed albumen and considerable sugar. Zeits. f. rat. Med. Kühtze Not. xxv. 52.

From 64 oz. of the diabetic urine of a woman, Dr. E. Stieren gained 3½ oz. sugar, crystallizing in warts, and ¾ oz. of a syrup containing apparently uncrystallizable sugar. Witts. V. Schr. ix. 361.

Attfield objects to Bœttger's test for sugar in urine, because nearly all specimens of urine color more or less the subnitrate of bismuth. Ph. J. and Tr. ii. 378. The cause is the presence of sugar in healthy urine (see above;) albumen must be removed; no other constituents interfere.

A new test for diabetes is offered in Bost. M. and S. Journ. founded upon the lustre of the spot left on evaporation at an elevated temperature. A. J. Ph. ix. 475.

Alkapton is a new substance found by Bödecker and E. Dürr in the urine of a man, suffering from an unexplained disease; it reduces permanganic and chromic acid, Fehling's liquid, but not subnitrate of bismuth; it contains C,H,N and O. Ann. d. Ch. und Ph. xli. 98. Ch. N. iii. 384.

Fat was found by Landerer in the urine of a man suffering with tuberculosis. See A. J. Ph. ix. 112.

Pigments. On the separation, composition and physiological sources of the normal urinary pigment, see a paper by Ch. R. C. Tichborne in Ch. N. v. 171.

Dr. Kletzinsky, of Vienna, attempts to demonstrate that Heller's uroglaucine, Martin's urocyanine and Braconnot's cyanourine are identical with indigo. See A. D. Circ. iv. 299.

G. Städeler publishes a process for obtaining xanthine and allied compounds which is founded upon their being precipitated by mercuric acetate and subacetate of lead. Ann. d. Ch. und Ph. xli.

CALCULI, &C.

Phosphates in urinary deposites are recognized by Landerer with molybdate of ammonia. A. J. Ph. ix. 411.

A biliary calculus was found by Gobley, to contain cholesterine 97·5, mucus and coloring matter 2·5 and trace of olein and margarin. He considers chloroform the best solvent for calculi of this nature. Rép. de Ph. xviii. 51.

Two *salivary calculi* are noticed by Bost. M. and S. J. 1860. One consisted of phosphate of lime, a little carbonate of lime and organic matter. Dent. Cosm. ii. 133.

The *dropsical liquid* of a patient contained, according to Landerer, much albumen and chlorides, also some iodide from the medicines. Witts. V. Schr. ix. 534.

An *ovarian cyste* yielded a liquid, in which Latour found 98·667 water, 0·660 fibrine with traces of albumen and fat, and 0·673 chloride of sodium with traces of phosphate of lime. J. de Ph. et de Ch. xxxix. 340.

Pus. See analysis of C. Giesecke in Ann. d. Ch. und Ph. xli. 110. A. J. Ph. ix. 403.

Fordos has isolated the coloring matter of some blue pus; it crystallizes in prisms and is distinct from biliverdine and Braconnot's cyanurine. Rép. de Ph. xvii. 143. Ch. N. ii. 119.

AGRICULTURAL CHEMISTRY.

We propose to include under this head only such essays, which treat of the composition of manures and soils, and of observations concerning plants which furnish medicinal substances; the former treatises because they will give hints for the analysis of such *mixtures;* the latter on account of their bearing upon the composition of pharmaceutical preparations.

THE SOIL.

A solution of *carbonic acid*, percolating through the soil, is robbed of the gas, which may be displaced by hydrogen. Van den Broek finds this fact to support Liebig's views of the nutrition of plants. Ann. d. Ch. und Ph. cxv. 87. A. D. Circ. v. 185.

Paul Thénard found that on the surface of the ground, *ulmates* are converted into nitrates, while in the subsoil nitrates are again transformed into ulmates. Ch. N. iii. 341.

Dr. Daubeny has experimented with soils containing salts of *baryta*, *strontia* and *arsenic*, and found that up to a certain proportion these poisons do not interfere with the development of the plants. Ch. N. iv.

ASSIMILATION OF PLANTS.

In an interesting paper entitled on the *Migration of Phosphorus* in vegetables, M. B. Corenwinder proves that phosphoric acid exists not in the cellular and fibrous tissues, but in the juices. The seeds contain considerable quantities of it, and he found in pollen of the white lily 1·45, and in the spores of Lycopodium clavatum 0·92 per ct. phosphoric acid. Ch. N. ii. 205, 281, 254.

Plants derive their *nitrogen* from ammonia and its salts, alkaline nitrates, cyanides and cyanurates and from urea. Prof. Ch. A. Cameron is satisfied from his experiments that neither free nitrogen nor humus can be sources of it, but he adds from his carefully conducted experiments, ferrocyanide of potassium and nitrite of potassa to the above list. Ch. N. ii. 145.

Ville proves by experiments that the *nitrogen of nitrates* is much more assimilable than that of ammonia. Cpt. rend. li. 874. Ch. N. iii. 341.

TRANSFORMATIONS IN THE LIVING PLANTS.

Berthelot and Buignet observed that the cane-sugar in *oranges* increases on maturation, while the quantity of inverted sugar remains about stationary. Cpt. rend. li. 1094. Ch. N. iii. 117. A. D. Circ.

Buignet in another paper in Ann. de Chim. et de Phys. 1861, Feb., states that during the maturation of *acid fruits* cane-sugar is transformed into inverted sugar. See abstract in Ch. N. iii. 227. A. D. Circ.

De Luca found, that green *olives* increase in specific gravity from 1·008 to 1·097; after the oil commences to form, it decreases to 1·007; mannite appears to be essential for the formation of the oil. Cpt. rend. liii. 386. A. D. Circ. vi. 23. A. J. Ph. x. 92.

FERTILIZERS.

Guano. Liebig states that guano rich in uric acid, is usually poor in oxalic acid; an analysis where no notice is taken of the oxalic acid, can give no proper estimate as to its value and comparison with ammoniacal salts; the rapid action of Peruvian guano is due to oxalic acid; he found in one sample 4·2 per ct. oxalic and 2·86 per ct. phosphoric acid. Ann. d. Chem. und Ph. cxix. 11. Ch. N. v. 268. A. D. Circ. v. 121.

Poor guanos. Malaguti found in Patagonian guano only 4 to 4·35 per ct. nitrogen, in guano from Peguin island not over 35 per ct. phosphates, mostly of alumina. Cpt. rend. liii. 486. Ch. N. iv. 290.

Fixing of ammonia. Schützenberger found that vegetable coloring matters are capable to fix gaseous ammonia. Bull. de la Soc. Chim. i. 16.

Paul Thénard found that straw, dry leaves, sawdust, &c., moistened with ammonia, yield a new acid, fuacic acid, which is formed in large quantities by sprinkling dungheaps with ammoniacal gas liquor, and is an excellent manure. Bull. de la Soc. Chim. ii. 33. Ch. N. iv. 136.

Guano from air. A notice of Margueritte and Le Sourdeval's paper see under the head of ammonia.

Urban guano. A correspondent of Ch. N. ii. 156, suggests a plan for the manufacture of guano from nightsoil, urine and street sweepings.

Guano from urine, &c. Chodzko obtains a manure rich in ammonia, by evaporating the liquid portion of the contents of

the fosses d'aisances of Paris. Ann. de Chim. et de Phys. lx. 201. Ch. N. ii. 311.

Fish offal and marine fucus are recommended by Dr. A. Gesner for the preparation of a valuable fertilizer. Scient. Am. A. D. Circ. v. 218.

Fish and marine animals. For their use in preparing a manure, a patent was applied for in England, by J. Ferrell, of Molde, Norway. Ch. N. iv. 316.

Herring pickle. The results of several analyses, and its use as a manure are described by Girardin and Marchand in J. de Ph. et de Chim. Ch. N. iv. 27.

Crushed bones separated by sifting and fanning from the solid heavy particles are recommended by W. A. Verel as a manure without any further preparation. Ch. N. ii. 297.

Fossile phosphates are best adapted for manures when in contact with an excess of ammonia. Cpt. rend. liii. 833.

Nodules of phosphate of lime heated with one half seasalt to a little below redness in a current of steam, furnishes, according to Boblique, a fertilizer for grain, containing silicate of soda, chloride of calcium, and the phosphates of lime and of soda. Cpt. rend. Ch. N. ii. 326. A. D. Circ. v. 203.

INORGANIC ANALYSIS.

GENERAL RESULTS.

The most important discovery in mineral analysis, by which already two new alkaline metals, rubidium and caesium, and another element, thallium, have been discovered, is the *spectral analysis* of Profs. Kirchoff and Bunsen, and their apparatus constructed for this purpose, in which the various elements after the introduction of their compounds into a flame, produce various colored bands and lines. Descriptions of both the process and apparatus will be found in nearly all the scientific journals of 1860 or 1861. Poggendorff's Annalen, cx. 161. A. D. Circ. v. A. J. Ph. ix. 224.

See also the paper on the color of flames by Merz in J. f. prakt. Chem. 1860, No. 11. Ch. N. iii. 146.

According to Ch. News, iii. 304, spectral analysis was sug-

gested and laid down by H. F. Talbot, between the years 1826 and 1836, and a paper on colored flames and spectral lines was read by Prof. A. Miller, before the British Assoc. in 1845. Notwithstanding, Kirchoff and Bunsen are entitled to the credit of adapting the color imparted to flames to a most important use in analysis.

Dr. K. M. Giltey, of Rotterdam, points out what he considers some important shortcomings of these two chemists in facts which had been noticed by Plucker long before them. Cosmos. Ch. N. iv. 328.

Consult also a paper by W. Crookes in Ch. N. iii. 2, on the opacity of the yellow soda flame to light of its own color.

Estimation of acids in salts. See E. Langer and R. Wawnikiewicz's paper in Ann. d. Ch. und Ph. xli. 280. A. J. Ph. ix. 405.

Persoz found that fusion with *bichromate* of potassa will not expel the acids from the salts of the inorganic acids, except from carbonates and nitrates; sulphites and hyposulphites are oxidized by the chromic acid, without any increase in the weight of the mixture. See A. D. Circ. v. 233. A. J. Ph. ix. 548.

Ozone. Houzeau rejects starch paste and iodide of potassium as a test, and recommends instead reddened litmus paper containing some of the iodide, which is turned blue by ozone. Pogg. Ann. cix. 180.

Sulphur. Schlossberger recommended molybdate of ammonia as a sensitive test for sulphur, it producing a blue color, Zeitschr. f. Ch. und Ph. v. 23. A. D. Circ. v. 82, which reaction is denied by Sheridan Muspratt who obtained merely a dirty bluish liquid. Ch. N. iii. 204.

ACIDS AND HALOGENS.

Nitrous acid. Lenssen found that a deep indigo-blue color is imparted to nitrites by dichloride of copper. J. f. prakt. Ch. lxxxii. 50. A. D. Circ. v. 129.

On the use of permanganate of potassa as an agent for esti-

mating nitrous acid, see Feldhaus' paper in Arch. d. Ph. clii. 32. A. J. Ph. ix. 216.

Nitric acid. Walker's modification of Varrentrapp and Will's process, to estimate it by conducting the gases from the combustion into chloride of zinc, is very properly condemned by Carey Lea. Am. J. Sc. and A. Ch. N. ii. 280, iv. 195.

Schulze expels first all ammonia by excess of potassa; subsequent boiling with zinc-filings evolves about one-half of the nitric acid as ammonia. Ch. Centralbl. 1861, No. 42. N. Jahrb. d. Ph. x. 96. In Ch. N. v. 111, the notice of the same paper states that heating with soda amalgam converts all the nitrogen into ammonia.

Stein heats the salt with oxide of lead, and recognizes the acid by the color produced upon paper dipped into a solution of a ferrous salt. See A. J. Ph. ix. 111.

Fresenius estimates it, by assaying the amount of ferric oxide, formed in a solution of ferrous chloride of known strength. A. J. Ph. ix. 112.

Pelouze's method is modified by Braun in estimating the formed ferric oxide by iodide of potassium, and the liberated iodine by hyposulphite of soda. J. f. prakt. Ch. lxxxi. 421.

In nitre, the nitric acid is estimated by Persoz with bichromate of potassa, (see above,) by F. Reich by fusing with considerable excess of quartz for half an hour, (see A. D. Circ. v. 169,) and by Müller by converting into chloride with hydrochloric acid. J. f. prakt. Ch. lxxx. 118. The nitric acid being determined from the loss, previous calcination is required; in Müller's process water is also given off.

Carbonic acid in water is measured by Prof. Dr. Pettenkofer with lime water and oxalic acid; for cautels see N. Repert. xi. A. J. Ph. ix. 406. Dr. Grager measures this acid in lye with chloride of calcium and oxalic acid. Archiv d. Ph. civ. 18. A. J. Ph. ix. 316.

Sulphurous acid in gas-form is recognized by Hugo Schiff from the grey color produced upon mercurous nitrate paper. Dingl. Journ. 1860. A. J. Ph.

H. Reinsch considers the most delicate test for this acid, boil-

ing with muriatic acid and copper wire. N. Jahrb. d. Ph. xvi. 227. A. J. Ph. x. 358.

Prof. Boedecker obtains with a considerable quantity of sulphate of zinc and a little nitroprusside of sodium, a rose or deep red color; free acids and alkalies prevent the reaction. Ann. d. Ch. und Ph. xli. 193. A. J. Ph. ix. 404.

Boracic acid, if tested for with curcuma, must be liberated by muriatic acid, as G. Leube, Jr., observed that dilute sulphuric acid will after some time impart a brown color. Wittst. V. Schr. ix. 395.

Phosphorus. See Dr. C. Herzog's paper in Arch. d. Ph. ci. 138. A. J. Ph. 127. W. Dankworth observed sulphur in the globules of phosphorus obtained in Mitscherlich's apparatus. Arch. d. Ph. civ. 168. A. J. Ph. ix. 316. Prof. Walz estimates phosphorus in food by oxidizing with nitric acid, neutralizing with carbonate of soda, filtering (if flour was present from the phosphate of lime,) and estimating the acid as usual. N. Jahrb. d. Ph. xvi. 301. This process appears to be inadmissible, if soluble salts of bases, precipitated by phosphoric acid in neutral solution, are likewise present.

Blondlot's experiments with Dussard's phosphorus test—the emerald colored flame in Marsh's apparatus, see detailed in Ph. J. and Tr. A. D. Circ. v. 219.

Eggertz explains his method for estimating phosphorus in iron and iron ore, by molybdate of ammonia in J. f. prakt. Ch. lxxix. 90.

Phosphoric acid is separated from iron and magnesia, by W. Mayer, by means of tartaric acid. Ann. d. Ch. und Ph. xxv. 164. A. J. Ph. ix.

F. M. Lyte estimates it in insoluble compounds, by converting all acids into lead salts, which are decomposed by sulphide of ammonium. Ch. N. iii. 131.

F. Pisani assays phosphoric acid with uranic acetate; the precipitate is $2Ur_2O_3, PO_5$. Cpt. rend. lii. 72. 106.

Prof. Bœdecker measures its solution with uranic nitrate. Ann. d. Ch. und Ph. xli. 195. A. J. Ph. ix. 404. Uranic oxide was recommended for the estimation of phosphoric acid by Arendt and Knop as far back as 1856.

After eliminating sulphuric acid, muriatic acid and the heavy metallic oxides, Chancel estimates it as phosphate of bismuth. Rép. de Ph. xvii. 272.

Reynox's process (as phosphate of tin) is modified by A. Girard in presence of ferric and earthy oxides, in dissolving the stannic phosphate in sulphide of ammonium and weighing as pyrophosphate of magnesia. Cpt. rend. Ch. N. v. 281.

Bromine. Fresenius coincides with Balard, that bisulphide of carbon is the best solvent for minute quantities of it. Zeits. Anal. Ch. i. 46. Ch. N. v. 254.

Bromine and iodine are measured by A. Reimann with chlorine water in presence of chloroform. Ann. d. Ch. und Ph. xxxix. 140. A. J. Ph. ix. 220.

Cholorine, bromine and iodine. F. Field defends his process for their separation from the unfavorable notice of Fresenius. The process is based upon the decomposition of AgCl by KBr, and of AgCl and AgBr by KI. Ch. N. ii. 325. iii. 17.

Available chlorine in hypochlorite of lime. Dr. Davy of Dublin recommends a process for the details of which we have to refer to Ph. J. and Tr. 1861, May, and A. J. Ph. ix. 347.

ALKALIES, ALKALINE EARTHS AND EARTHS.

Potassa. Carey Lea found that picric acid is unreliable for detecting potassa, and that it is a much better test for soda. Am. J. Sc. and Arts.

Ammonia. If potassa is added to a boiling solution of an ammoniacal salt containing a large excess of bichloride of mercury, 5843 basic amido-chloride of mercury having a yellow color, is precipitated for each 212·5 NH_3. Dr. Kappel and G. Leube, Jr., have founded upon this reaction a process for the volumetric estimation of ammonia. Witts. V. Schr. x. 19.

Lime. See a process for the titration of burned lime for caustic lime by oxalic acid in presence of chloride of ammonium. Arch. d. Ph. ciii. 270. A. J. Ph. ix. 314.

Scheerer separates small quantities of lime from *magnesia* by treating their sulphates with alcohol. Ch. N. ii. 199. This process founded on the solubility of sulphate of magnesia in di-

luted alcohol is Duflos' old method, and applicable for other bases beside lime.

Lime is separated by H. Rose from *alumina* by precipitating with ammonia or its carbonate, and boiling until the ammonia has disappeared; the lime is in solution, the precipitate contains all alumina; the addition of chloride of ammonium may be necessary. The same process applied to magnesia and alumina is not quite so accurate. Pogg. Ann. cx.

For separating lime from *strontia*, H. Rose treats the nitrates with alcohol containing an equal volume of ether, whereby only 1-60,000th of the strontia salt is taken up. Less delicate is the method to dissolve the sulphate of lime in 50 p. sulphate of ammonia and 200 water. Poggend. Ann. cx. 292. Ch. N. ii. 291.

Diehl suggests to separate sulphate of lime from *baryta* by a concentrated solution of hyposulphite of soda. Jahresb. d. phys. Ver. zu Frankf. Ch. N. iii. 326.

Alumina in alum, is estimated by converting into chloride and measuring with potassa. See Dr. Erlenmeyer and Lewinstein's paper in Arch. d. Ph. civ. 275. A short abstract in A. J. Ph. ix. 316.

Cerium, lanthanium and *didymium* were examined by Stapff, who points out some reactions by which their oxides may be separated. J. f. prakt. Ch. lxxix. 257. Ch. N. ii. 251.

OXIDES OF THE HEAVY METALS.

General remarks. H. Rose proposes to weigh the metals as sulphides. Pogg. Ann. cx. 120. Ch. N. ii. 302.

Fresenius has investigated the influence of free ammonia and ammoniacal salts upon the precipitates of sulphides of nickel, cobalt, zinc, iron and uranium. Journ. f. prakt. Ch. lxxxii. 257. Ch. N. iv. 150.

Diehl observed that the ferro- and ferridcyanides of copper, lead, silver and mercury are soluble, while the corresponding compounds of zinc, manganium, cobalt, nickel, cadmium and tin are insoluble in hyposulphite of soda. This behaviour may be useful for their qualitative separation. See Ch. N. iii. 327. Witts. V. Schr. x. 63.

Manganium is separated by Rose from *alumina* similar to lime, (see above;) from *magnesia* by heating with acetate of soda, oxidizing with chlorine and precipitating by ammonia; Mn_2O_3 is separated. Pogg. Ann. cx. 292. Ch. N. ii. 266.

J. H. Henry separates it from cobalt and nickel, as phosphate in presence of excess of ammoniacal salts, and weighs as $2MnO, PO_5$. Philos. Mag. xvi. 197.

Iron. Dr. F. C. Calvert prefers succinate of ammonia for separating iron from lime and magnesia. Ch. N. ii. 327.

Erdmann dissolves iron from iron ore in presence of zinc, by muriatic acid, and converts it into Fe_2Cl_3 by chlorate of potassa, if it is to be reduced by metallic copper. Journ. f. prakt. Chem. lxxvi. 176.

Sesquisalts of iron, according to Delffs, are not colored by sulphocyanide of potassium in the presence of tartrates, racemates, citrates and malates of the alkalies. See A. D. Circ. v. 7.

Chromic oxide is recognized by Dr. F. H. Storer, by precipitating the oxides by an alkali, oxidizing by boiling with peroxide of lead to chromic acid, and by binoxide of hydrogen to perchromic acid, which dissolves in ether with a characteristic blue color. Proc. of Am. Acad. of Arts and Science.

Tellurium. For its estimation and separation see H. Rose in Pogg. Annalen, cxii. 307. Ch. N. iv. 269.

Cadmium is separated from copper according A. W. Hofmann by dissolving its sulphide in boiling dilute sulphuric acid, which has no action on the latter. Ann. d. Ch. und Ph. xxxix. 286. A. J. Ph. ix. 312.

Tin. For a mode by Stromeyer of measuring the metal, see Ann. d. Ch. und Ph. xli. 261. A. J. Ph. ix. 405. On its estimation in ores, see Moissenet's paper in Cpt. rend. li. 205. Ch. N. ii. 132. On the best modes for separating it from other oxides, see H. Rose in Pogg. Ann. cxii. 163. Ch. N. v. 86.

Lead. Its sulphate may be dissolved in hypophosphite of soda at a temperature not exceeding 20° C.; sulphate of baryta is completely insoluble. J. Loebe, J. f. prakt. Ch. lxxvii. 75.

Arsenic. To separate it from antimony the precipitate of

their hydrogen compounds in nitrates of silver, is boiled by Prof. Hofmann with tartaric acid, which dissolves only the antimony. Ann. d. Ch. und Ph. xxxix. 287. Ch. N. ii. 159.

Lenssen found that AsS_3 dissolved in NH_4S, is precipitated by magnesia salts as ammonio-arseniate; tin and antimony are not precipitated. See A. J. Ph. ix. 114.

See a paper by H. Reinsch on his test for arsenic by copper in N. Jahrb. d. Ph. xvi. 135. A. J. Ph. x. 356.

E. C. C. Stanford found that ferric salts, chloride of copper, permanganate and bichromate of potassa, peroxide of lead, perchloric acid and hypochlorites affect copper similarly. Ph. J. and Tr. ii. 510. So does sulphurous acid; see above.

The Quart. J. of Ch. Soc. has a paper on the electrolytic test for arsenic and the cautels to be observed for detecting it in sulphuretted hydrogen and other reagents. Ph. J. and Tr. ii. 528.

Mercury. H. Rose's paper on the estimation of mercury under various circumstances in Pogg. Ann. cxii. Ch. N. iv. 218.

Silver. See a lengthy and very interesting paper by Mulder on the assay of silver in the wet way. Ch. N. vol. iv.

Fellenberg's method for estimating it in the metallic state, see in Schweiz. Zeits. v. 121. A. J. Ph. ix. 110.

Gold and *platinum.* A. Béchamp and C. Saint Pierre have made researches on their separation from tin and antimony by iron salts. The results, though interesting, are as yet of no practical application. Cpt. rend. Ch. N. iv. 284.

ORGANIC ANALYSIS.

GENERAL AND ELEMENTARY INVESTIGATION.

Liquid diffusion was suggested by T. Graham as a means for separating mixtures of different compounds. The interesting essay was read before the Roy. Soc. of Great Britain, June 6th, 1861. See A. J. Ph. ix. 513.

Consult also the remarks on the process by Liebig in Ann. d. Ch. und Ph. cxxi. 1. A. D. Circ. vi. 85, by Bouchardat in Rép. de Ph. xviii. 480, and by Prof. Procter, in A. J. Ph. x. 313.

S. L. Carius has experimented with and recommends nitric acid for the analysis of readily oxidizable compounds, but particularly for assaying sulphur, phosphorus, the halogens and metals in organic combination. The correctness of the method is proved by experiments, and the simple apparatus necessary is explained and figured. Ann. d. Ch. und Ph. xli. 30. Ch. N. iii. 67.

Sulphuretted organic compounds are burned with chromate of lead by Carius, and the vapors passed over a long column of the same salt to fix the sulphur. Ch. N. iii. 66. See also a description of the author's mode for assaying chlorine in A. J. Ph. x. 332.

Dr. W. Knop has made an improvement in the apparatus for estimating the carbon of organic compounds by Brunner's method (by sulphuric acid and bichromate of potassa.) See description in Chem. Centralb. 1861, No. 2. Ch. N. iv. 13.

E. Mulder points out some errors occurring in the estimation of nitrogen by combustion with soda-lime. See Ch. N. v. 238.

Bouis uses oxalate of lime instead of oxalic acid and soda-lime, and obtains more reliable results. J. de Ph. et de Chim. xxxvii. 266. Ch. N. ii. 83.

ORGANIC ACIDS.

Hydrocyanic acid. Dr. W. Pile modifies the process of Liebig for volumetric assay. A. J. Ph. x. 130. This adaptation by Mohr has been published several years since in his Titrirmethode.

Ferrocyanide of potassium is measured by Dr. W. Rubach in very dilute solution with perchloride of iron; the Prussian blue remains in solution until the precipitation is complete, when it separates instantly. Kühtze's Notizen xxv. 1.

Jos. Müller finds that 4 parts sulphate of zinc are precipitated by 5 parts ferrocyanide of potassium, $3ZnCy+KCy+2FeCy+6aq$. The precipitate with 4·818 ferridcyanide=$Fe_2Cy_3+3ZnCy$, is apt to be decomposed by too long continued washing. Witts. V. Schr. x. A. J. Ph. x.

Tannin is estimated in volumetric analysis by Müller, with a solution of 18 grm. gelatine and 2½ grm. alum in 820 CCm. water; 31 CCm. will precipitate 1 grm. tannin. See A. J. Ph. ix. 164.

Tartaric in citric acid is detected by heating the solution with excess of hydrated ferric oxide to near boiling, then decanting and evaporating to a syrupy consistence; pure citric acid remains clear, in the other case tartrate of iron is precipitated. Arch. d. Ph. clviii. 206. Ch. N. v. 196.

The precipitate is not tartrate of iron, but contains some products of oxidation. Compare the much simpler test with potassa under materia medica.

Meconic acid. Dr. T. G. Wormley has made a series of experiments to ascertain the limits of reaction. Ch. N. ii. 171.

ORGANIC ALKALOIDS.

Thos. E. Jenkins has written out a table showing the reactions which he obtained with alkaloids, glucosides, &c., on treating upon a porcelain slab ½ gr. with one or two drops of sulphuric acid, adding afterwards a fragment of bichromate of potassa. See Ch. N. ii. 197. A. J. Ph. ix. 528.

Prof. W. A. Guy, of London, in a lecture on the color tests of strychnia and the diagnosis of the alkaloids, gives a table showing their behaviour to sulphuric, nitric and permanganic acid. Ch. N. iv. 116. Ph. J. and Tr. iii. 15. The table includes many neutral principles. See A. J. Ph. ix. 517.

On the *color test* for the poisonous alkaloids, see also a paper by J. Erdmann in Ann. d. Ch. und Ph. 1861, Nov.

Phospho-molybdic acid. Prof. de Vrij claims priority for discovering this test for alkaloids. See A. J. Ph. ix. 312.

Morphia. Dr. T. G. Wormley experimented with morphia, to ascertain the limits at which the reactions may be observed. See Ch. N. ii. 137.

Narcotina has been experimented with in a precisely similar way. See Ch. N. ii. 158, 170.

Morphia is measured by Kieffer with ferridcyanide of potassium, which is reduced to ferrocyanide; the excess of the for-

mer employed is measured back as chlorine, by hyposulphate of soda. A. J. Ph. ix. 218.

To detect minute traces of morphia, Lefort makes the reaction with iodic acid upon bibulous paper saturated with the suspected solution. Rép. de Ph. xviii. 125. A. J. Ph. x. 366.

Quinia is according to Roger soluble with difficulty in absolute ether, but readily in ether containing 2 per ct. alcohol, which he recommends for detecting quinidia and cinchonia. J. de Ph. et de Ch. xli. 204.

Dr. F. A. Flückiger states that fluorescence is the most delicate test for quinia, whereby 1-1000th of a milligramme can be still discovered. See A. J. Ph. x. 334.

On the examination of sulphate of quinia for the other alkaloids occurring in cinchona bark, a valuable paper by Dr. G. Kerner, will be found in Zeitschr. f. Anal. Ch. translated into Ph. J. and Tr. iv. 19.

Glénard and Guillermond now substitute oxalic for the sulphuric acid in their process; from a Calisaya bark without epidermis they obtained thereby 60 grm. quinia pr. kilogrm. J. de Ch. et de Ch. xli. 40.

Coffeina, evaporated to dryness with chlorine water, leaves according to Schwarzenbach a purple red residue; this turns golden yellow on heating, but after cooling becomes purplish red again with ammonia. Chem. Centralbl. 1861. Ch. N. v. 139.

Strychnia, according to Landerer, assumes with iodic acid a rich violet color, gradually changing to red-brown; iridescence is likewise observed. Hirzel's Zeitschr. xii. 86. A. J. Ph. ix. 110.

Tartaric acid prevents the reaction of strychnia with chromic acid, but not with binoxide of lead, if the alkaloid or its nitrate is used. R. Hagen. See A. J. Ph. ix. 218.

Dr. J. J. Reese corroborates Wormley's statement that the color test of strychnia is completely disguised by an excess of morphia. A. J. Ph. x. 212.

Prof. R. P. Thomas dissolves strychnia and brucia by chloro-

form in the presence of an excess of potassa; morphia remains behind. Ibid, 227.

J. Horsley precipitates the alkaloids with chromate of potassa; the chromate of strychnia crystallizes first, Ch. N. v. 341. Horsley also recommends nitroprusside of sodium as a test for strychnia, even in presence of large excess of morphia. Ibid 355. He succeeded, essentially by Stass' method, to separate from animal and vegetable matter 1-3000th grain, and recognized it by the color test. Ibid, ii. 211.

Prof. Rud. Wagner estimates strychnia, narcotia, morphia, quinia, cinchonia, anilina, veratria, aconitia, brucia, atropia, bebeerina (but not coffeina, theobromia, piperina, urea,) by precipitating with an excess of iodine in iodide of potassium, and measuring back the excess of iodine by means of hyposulphate of soda. Dingl. Journ. 1861, July 13. A. D. Circ. v. 219.

SUGAR.

See also Physiological Chemistry.

Grape sugar is recognized besides cane sugar by O. Schmidt, with trisacetate of lead and ammonia, and applying heat; the precipitate in presence of grape sugar turns red. Ann. d. Ch. und Ph. cxix. 102. A. J. Ph. A. D. C. v. 235.

J. Attfield recommends Bœttger's test as exceedingly sensitive. Ch. N. iv. 329.

On the copper test for sugar and the precautions to be observed, see a paper in Ch. N. A. J. Ph. x. 247.

Dr. A. Vogel, Jr., noticed that indigo solution is occasionally decolorized by cane sugar, owing to the presence of a little free sulphuric acid; he recommends tincture of litmus instead, which is not affected by cane sugar, but decolorized by grape and milk sugar. N. Repert. f. Ph. xi. 62.

Dr. W. Roberts, of Manchester, estimates sugar in diabetic urine by fermenting 4 oz. with some solid German yeast, and comparing the specific gravity of the unfermented with the fermented urine; for each grain of sugar, there is a fall of one degree in density (Aq=1000.) Edinb. M. J. 1861, Oct. Am. Monthly, xvii. 115.

The report on the same paper in the Pharmac. Centralhalle states, that the difference in the spec. gravity (aq=1000) is multiplied with 0·23 to ascertain the percentage of sugar.

ADULTERATIONS AND IMPURITIES.

INJURIOUS TECHNICAL PREPARATIONS.

The adulterations and impurities of the strictly medicinal substances have been noticed in their respective places in Materia Medica. We append here those practised with articles of food and such substances employed in the arts, which are more or less connected with the drug trade. Preparations which are injurious to health, though not allied to the business of the pharmaceutist, likewise deserve a proper notice.

In the report of the Commissioners of Inland Revenue, G. Phillips states the following adulterations:

Tobacco with cabbage leaves, sugar, liquorice, oil, carbonaceous matter, saltpetre, Epsom salt, table salt, alum and chalk.

Snuff with roasted oat-meal.

Ground Pepper with the husks of red and white mustard and rape seed, sago, cereal starches, powdered slate, capsicum, long pepper and the stalks and husks of pepper.

Coffee with 39 to 59 per ct. chicory.

Spent hops with grains of paradise, roasted chicory, and calamus. Ch. N. ii. 161, 171.

Preserves and Pickles. The "Lancet" states that copper has been detected in green gage, gooseberries, rhubarb, preserved peas, French beans and pickles; of 33 samples examined, 21 contained the poison. A. M. Times, iv. 32.

Wentworth L. Scott has compiled a table showing the important articles of food and drink, and their adulterations, published in Ch. N. ii. 198. Compare also his remarks upon it and the "adulteration of food act" in England. Ibid 184.

Flour and bread have been found adulterated with sulphate of copper by J. Horsley. Ch. N. iii. 111. See also his paper on the correct detection of alum in bread. Ibid, iv. 326.

In several French villages, an epidemic lead colic prevailed for a long time, until Dr. Maunoury and Salmon detected lead in the flour used there which was derived from the millstones. Rép. de Ph. xviii. 434.

Milk. Prof. Kletzinsky states that borax is sometimes added to prevent its turning sour, and to impart to it more consistence. It is detected in the ashes. Polyt. Centralbl. 1861. A. J. Ph. x. 35.

Butter. To detect its adulteration with lard, J. Horsley recommends to treat it at 65° F., with ether which will dissolve pure butter. Ch. N. iv. 235. See, however, remarks on this subject in Ch. N. iv. 322.

Olive oil is tested by Cailletet with hyponitric acid, with which it produces a verdigris color, retaining it for 15 or 20 minutes if pure, but disappearing rapidly if adulterated. Bul. de la Soc. Indust. xxix. 463. Ch. N. ii. 251.

Carmine. J. M. Maisch found in a sample of No. 40, 57·14 per ct. starch. A. J. Ph. ix. 17.

Rape oil used to adulterate other oils, is detected by F. Schneider by testing its ethereal solution with an alcoholic solution of nitrate of silver. Ch. N. iii. v. A. D. Circ. See also the process of Mailho in A. J. Ph. 1856, 68.

Coal gas if containing sulphide of carbon, will according to Hofmann, produce a net work of ruby colored crystals, when passed through an ethereal solution of triethyl-phosphina. A. D. Circ. iv. 255.

Dr. Herzog passes gas through an alcoholic solution of acetate of lead mixed with an excess of alcoholic ammonia; an orange color and deep brown precipitate is produced by sulphide of carbon, lighter in color if carbonic acid is also present. Chem. Centralbl. 1861, 1. Ch. N. iii. 128, 330.

Shellac is tested by Oberdörffer with ether which dissolves only 5 per ct. of the pure article. Arch. d. Ph. ciii. 18. A. J. Ph. ix. 318. A. D. Circ. iv. 321.

Wafers are as Wittstein found, mostly colored by some lead compound. Wittst. V. Schr. x. 557. A. J. Ph. x. 327.

Woolen yarn is tested for cotton, by dissolving the latter in

sulphuric acid, or the former in liquor potassæ, and by estimating the nitrogen. Arch. d. Ph. civ. 248.

Sewing silk. A sample was found by Dr. Eulenberg to contain 18 per ct. oxide of lead. A. D. Circ. v. 171.

Tinfoil. J. H. Baldock found tinfoil to contain 76 to 88 lead, and only 12 to 24 tin; so-called pure tinfoil contained 34·4 per ct. lead. Ph. J. and Tr. iii. 378. A. J. Ph. x. 258.

Arsenical colors and their injurious influence have within a few years past attracted considerable attention of the medical profession and of chemists. These dangerous preparations have been noticed as a paint for the walls of rooms, of wall paper and children's toys, and they have been merely mechanically fastened upon ladies' dresses, and artificial flowers. Accounts of their occurrence may be found in most journals devoted to pharmacy; we mention only Archiv der Pharmacie, 1860. Ph. Journ. and Trans. ii. 111. Ch. News, ii. 111. A. J. Ph. ix.

A green color, offered as a harmless substitute for Schweinfurt green, contained according to C. Struve, 13·65 chromate of lead, 80·24 subcarbonate of copper, 0·77 ferric oxide, 2·65 carbonate of lime, 2·58 moisture. Arch. d. Ph. civ. 42.

In presenting the above report, the Committee hope that it may prove as useful as they have intended to make it.

All of which is respectfully submitted,

J. M. Maisch, *Chairman.*

APPENDIX.

The Philadelphia College of Pharmacy.—Since the last meeting of this Association, this College has made steady progress toward the objects for which it has been so long laboring. The School of Pharmacy under its auspices has not suffered in its attendance. The session of 1860–61 had 123 matriculants, and 40 graduates, and at the session 1861–62 there were 90 matriculants and 30 graduates.

The publication of the American Journal of Pharmacy has been continued uninterruptedly, notwithstanding a great falling

off in the number of subscribers, due to the rebellion and consequent troubles. This College at a late period last year appointed a committee to collect together and forward to the great exhibition at London, a set of specimens of strictly American drugs. The season was too late to make the collection perfect, yet about 200 specimens of all kinds were sent, and it is to be hoped that it will have the effect to draw the attention of English and Continental Pharmaceutists to the subject of our indigenous materia medica. By late news from Europe, we learn that a medal has been awarded this College for the specimens on exhibition.

The College of Pharmacy of the city of New York.—During the past two years this College has shown more energy and enterprise than heretofore. The library has been greatly increased with choice works of recent publication, its cabinet with many specimens of American and foreign chemicals, and a large addition to its herbarium.. Its lectures and meetings have been better attended than for several years past. The session of 1860-61 was attended by 23 students, of whom five graduated. During the year 1861 the College moved to the N. Y. University Building, and now occupies a spacious room for its purposes. The faculty consists of John M. Maisch, Prof. of Materia Medica and Pharmacy, and Ferdinand F. Mayer, Prof. of Chemistry. The session of 1861–2 was attended by 22 students, and 3 of the class graduated. During the present season, a summer course of lectures on Pharmacy, Botany, and Chemistry have been given by the Professors, and were well attended. The lectures on Botany were illustrated by weekly excursions in the suburbs of the city, and the lectures on Chemistry by experiments in the laboratory. Conversational meetings of the members are held monthly, and have been very interesting, though the attendance has not been as large as was anticipated.

The Maryland College of Pharmacy.—This institution continues to exercise a beneficial influence, and possesses a gradually increasing vigor. The class of 1860--61 consisted of

16 students, 5 of whom graduated; that of 1861--62, of 22 students, 6 of whom graduated. Dr. Francis Donaldson is Professor of Materia Medica, Dr. J. Faris Moore is Professor of Pharmacy, Alfred Mayer is Professor of Chemistry.

The publication of the Journal by this College has been discontinued. It was supported by the institution and individual donations—the editor and contributors received no remuneration for their services. We have good reason to believe that the publication will soon be resumed.

THE MASSACHUSETTS COLLEGE OF PHARMACY.—This College, we believe, has never organized any course of instruction. We have not heard of any action in their body for the past two years. Its officers for the present year are, Thos. Hollis, President; Charles A. Tufts and Charles T. Carney, Vice-Presidents; H. W. Lincoln, Recording Secretary; J. S. Melvin, Corresponding Secretary; A. Boyden, Treasurer. No reply has been received from this College by your Committee.

THE CINCINNATI COLLEGE OF PHARMACY still holds its organization, but owing to the troubles of our country, and to its effects on the business of that city, has not deemed it advisable to institute any course of instruction at present.

THE CHICAGO COLLEGE OF PHARMACY, though not a very large association, has, during the past winter, sustained a course of lectures, which was delivered by Prof. F. Mahla, but found some difficulty in procuring students, as little interest has been felt in anything except the war.

THE ST. LOUIS PHARMACEUTICAL ASSOCIATION has felt the effect of our national troubles more than any of our Pharmaceutical organizations. A year ago, when our annual meeting would have been held, that city was in a state of excitement, owing to the warfare within its vicinity. The officers for the present year are, Thomas Scott, President; Joseph McCullough and James Francis, Vice-Presidents; James McBride, Recording Secretary; Eugene L. Massot, Corresponding Secretary; and Enno Sander, Treasurer.

THE PHARMACEUTICAL ASSOCIATION OF WASHINGTON D. C., has not responded to the inquiries of your Committee. The same remark will apply to various members of the Association from whom the Committee desired information.

Signed, P. W. BEDFORD,
Corresponding Secretary, (and one of the Committee.)

SPECIAL REPORTS AND ESSAYS.

ON THE OFFICINAL SPIRITS.

BY THOMAS S. WIEGAND.

In the fall of 1860, at the meeting held in New York, among other subjects brought before our Association to be reported on at the next meeting was the question; "Are the 'spirits' of the Pharmacopœia better when made by distillation, than the preparations made by dissolving the respective volatile oils in alcohol?"

The object of this inquiry will not be as completely carried out by your Reporter as he could desire, owing to engagements of a personal nature being forced upon him at the very period allotted by him to the preparation of this essay.

A long time ago my attention was directed to the necessity of a more close adherence to the instructions of the National Pharmacopœia as a means of preventing those annoying comments made by physicians respecting the quality of the preparations made by one pharmaceutist when put in comparison with those made by another, who assumes to himself a superiority for which no just claim can be instituted; a further reason was found in the fact that the so much used spirits of Lavender Compound, was made by nearly every one in his own way; one formula prescribing simply oil of Lavender, or oil of Garden Lavender, which may be understood oil worth eighty cents per pound, or 1·75, or 3·50, or 21, as the judgment or cupidity of the maker may direct. Still another formula has found some favor with pharmaceutists, introduced originally, I believe, by Mr. Geo. D. Coggeshall, of New York, in which the flowers and aromatics are ground together and displaced till a proper quantity of tincture has been obtained.

Before reviewing these formulæ it will, perhaps, facilitate our

investigations to enquire into the object in view in the process of distillation, and then ascertain whether this object will not best secure the end of those who first proposed the "spirits" of our Pharmacopœia. A primary purpose of distillation is, without doubt, the removal of the volatile matters of any substance from its other components which cannot be so drawn off, and thus many of its useless associates are at once disposed of, while it is to be remarked that the volatile matters have been purified as well as separated.

In recurring to the various formulæ before alluded to, it is easy to see how entirely dissimilar will be the resultants of such varying directions, and how perplexing to the conscientious pharmaceutist, whose efforts are directed to the improvement of all the products of his labor. The last formula noticed above gives a preparation entirely different in character from any others, and so unsightly that it might well excite the suspicion of any physician who had directed the well known and elegant preparation, officinal in our Pharmacopœia.

That your Reporter is not alone in entertaining the views he does upon the subject of distilled spirits, the following facts will sufficiently testify, and show that those whose superior educational advantages in our profession entitle them to great respect, have long since settled upon views based upon similar considerations.

In the sessions of the Committee of the Philadelphia College of Pharmacy, charged by that body with the preliminary revision of the Pharmacopœia, when the subject of spirits was under discussion, among other formula reported, a set were brought before the Committee by the Sub-committee, charged with this subject, which directed the oils to be dissolved in the alcohol, and distilled. At first this seemed a useless complication of the labor, but more thought upon the subject has convinced the writer that this was a move in the right direction, and but one single objection weighed against it, which was that of making the oil the basis of the preparation, instead of the plant furnishing the oil, many oils cannot be made in this country in the present undeveloped state of floriculture in our land.

Further the lists of continental Pharmacopœias point loudly

to the meagre catalogue of our National College in this department. Gray, in his valuable supplement enumerates 19, and the Paris Codex names 6 not noticed by Gray, 25 against two. Are we so smart, so learned, so conceited must I add, that we can throw away the experience, the thought and science for which our tongues have long been used to praise and acknowledge European Pharmaceutic talent—or have we determined a new standard by which to decide upon any formula, the merits of which are acknowledged, viz. Can it be made in the fewest possible number of minutes without any apparatus and with no more thought than necessary to attend to the mixing of the same number of ingredients together?

ON THE RESINOID MATTER OF COLOCYNTH.

BY JOHN FABER.

Has the resinoid principle of Colocynth, extracted by alcohol, a reliable and constant therapeutic power, and may it be advantageously employed in medicine?

2½ lbs. Colocynth were deprived of the seeds, and the pulp weighing 10 ounces, treated with 90 per cent. alcohol, the result being a resinous product, weighing 1½ ounces.

As the medicinal action could only be investigated by the physician, I distributed it among my acquaintances, put up for their convenience in ¼, ½ and 1 grain pills, but failed to get a report, the majority of them being afraid of the violent action, while some of them that had sufficient interest in the matter, and had the opportunity to try it in one of our public institutions, were prevented from doing so by assuming patriotic duties.

While I beg to have the subject continued to me for another year, I shall mention that the Prussian Dispensatory has an alcoholic extract of Colocynth made with an alcohol of 0·895 sp. gr., the effect of which is described as: Vis, vehementissime laxans. It acts sufficiently in ¼ grain doses, and in ½, and 1 grain doses, most powerfully purging and vomiting.

The yield of this extract was 3¼ ounces from 10 ounces of pulp, containing besides resin a good proportion of extractive matter.

From my own personal experience in dispensing this alcoholic extract, I am enabled to say that its effectiveness is not impaired by time or age. Follows specimen.

New York, August, 1862.

ON THE CULTURE OF THE ELATERIUM PLANT.

BY ROBERT P. THOMAS, M. D.

Can Elaterium be produced in the United States? and if so, is the indigenous product equal in power to the English drug?

A satisfactory determination of this question can only be made by a person having convenient access to a rural district, and sufficient leisure to watch the ripening of the fruits, and to collect them at the proper moment. Having been unable to give personal attention to the growth of the plants, the writer made an arrangement with a relative in Germantown to undertake their culture, and procured an ounce of the seeds from England for the experiment. Small as this quantity seems, it would probably have answered the purpose had we been possessed of sufficient practical knowledge of the proper time for planting.

In August, 1850, I plucked a single fruit from a vigorous plant in Dr. Wood's garden, and kept its seeds until the following May, when they were planted in garden soil in a warm situation. Vigorous plants sprang from these seeds, and furnished well-matured fruits in the latter part of August and the early part of September. Most of the fruits were collected for class exhibition. A few, however, dropped on the ground, and in the following year a larger crop appeared spontaneously,—thus showing that the seeds will survive our winter months. Misled by this observation as to the hardiness of the seeds, I made the mistake of having those from England planted on

the 25th of April, last year. This period proved premature, as not a single plant appeared. Cold, wet weather followed, and the seeds rotted in the ground. A few, that had been left, were planted on the first of June. These produced plants, more or less vigorous, according to position and exposure. For instance, those upon high ground, and in situations exposed to the sun, were strong and vigorous; while others, upon a shady hill-side, were dwarfed and stunted. The fruits of the former were large and perfect, while the latter remained small and green. The quantity obtained was too little for any attempt at the preparation of Elaterium.

Arrangements were made for renewing the experiments the present year, but absence from home with the Army of the Potomac, at the proper period for planting, interfered with the design, and, as a consequence, I am unable to answer the question referred to me by the Association.

Something, however, in the way of experience has been gained, which will prove useful to other observers, more favorably situated, in the prosecution of the inquiry. In England, according to the late Mr. Jacob Bell, the seeds are sown in March, and the seedlings planted in June. My best results were obtained by placing the seeds in pots towards the last of April, and setting out the plants in rich warm soil in the latter part of May, or beginning of June. When thus managed, the Momordica Elaterium thrives vigorously in our climate, and I do not entertain a doubt as to its yielding a large amount of active principle.

Philadelphia, August, 1862.

HODGSON'S PATENT GRADUATED MEASURES.

EXHIBITED AND DESCRIBED BY EDWARD PARRISH.

This improvement consists in making Graduated Glass Measures in a press-mould so constructed that all measures made in the same mould may be precisely alike in their graduations; which are formed in the mould itself. The usual tedious and

expensive, and scarcely reliable method of testing and cutting the respective measurements separately in each glass (often very carelessly executed) is thus avoided.

The general form of the mould is on the principle of other press-moulds, so far as having a base on which slide together (closely to fit each other) two folding halves, hung on a perpendicular hinge, with a shoulder; these four parts forming, when closed, the outside shape of the glass vessel; and having likewise a "plunger," of the requisite figure, to form the inside of it. But in the press-moulds previously used for vessels of various forms, there was no provision for insuring a precisely similar size and shape of the interior; which, of course, was essential in the formation of measures by one operation. There is always, in the process of manufacturing in a press-mould, some irregularity of supply to the mould of the molten glass—sometimes more, sometimes less, being poured into its cavity before inserting the plunger—and the surplus was disposed of by allowing the bottom of the glass to be correspondingly thicker or thinner. It is evident that this would have interfered with the exact similarity necessary in vessels intended for measures of capacity. To obviate this, therefore, the patentee provided, in the form of the mould, for the escape of the surplus molten glass upwards, (instead of its being pressed downwards,) increasing, *temporarily*, to some extent the height of the vessel; and to insure the requisite exactness with which the inside and outside of the measure should answer to each other, (the indispensable condition for accuracy of measurement,) the plunger was furnished with a projection or collar, which meets the shoulder of the mould at a certain height in passing down through its circular opening, and prevents the plunger from descending further than the required distance in forming the interior cavity of the vessel. There is likewise placed in the mould a certain mark, by which it may be at once perceived whether the workman, employed in making any measure, has carefully followed the directions; so that a glance at the vessel will detect any inaccuracy. The above-mentioned surplus glass is, after the vessel is taken from the mould, to be sheared or cut off, a lip to be formed in the margin, and the vessel to be annealed as usual.

It is evident from the above description, that as the whole surface of the vessel may, if needed, be covered with marks or figures, without additional expense, after the mould is once finished, these measures can be furnished, at no extra charge, with graduations to adopt them for use both among druggists or physicians, and in hospitals, private nurseries, or sick-rooms; the marks on one side of the glass being technical, (ounces, drachms, &c.,) and on the other of a popular character, such as teaspoonfuls, tablespoonfuls, gills, &c.

ON THE NECESSARY APPARATUS FOR SMALL CHEMICAL AND PHARMACEUTICAL OPERATIONS.

BY EDWARD PARRISH.

In answer to the query as to the smallest outfit of apparatus for a retail pharmaceutist, with reference to the preparation of chemical and pharmaceutical products on a limited scale, I offer the following observations: The very smallest outfit is perhaps *never* desirable, as success in a process is often prevented from want of suitable apparatus, though, on the other hand, the accumulation of complex and costly implements is seldom productive of convenience or economy.

To aid the inexperienced in reaching a proper medium between the extremes of too much and too little apparatus, and to show how very small an outlay will put it in the power of the pharmaceutist to employ his leisure profitably and pleasantly in manipulation, is the object of this essay.

It is, of course, presumable that the apparatus for powdering drugs, for forming solutions, for percolation, for filtration, for weighing, and the ordinary dispensing operations, are already in every shop; they are indispensable to the daily demands of business, and are also available for many chemical and pharmaceutical processes, too seldom pursued by the apothecary. Every establishment is also provided with a stove or other heating apparatus, which, in the proper season, will serve many purposes in manufacturing, but as these are often ineligible it will be necessary to include furnaces and lamps in our enumeration. Suitable

works on the chemical and pharmaceutical processes should be in the library of every shop, but are omitted from the list. The object will, perhaps, be best attained by giving first a list of apparatus desirable to a beginner who is already possessed of the ordinary apparatus for dispensing, and following this, with a more limited list designed to show the minimum of expense required for apparatus necessary to carry on the ordinary small chemical and pharmaceutical manipulations.

SUITABLE OUTFIT OF APPARATUS.

	ESTIMATES.	
	Lowest.	Highest.
Clay furnace for charcoal, gas-furnace and tubing, or alcohol lamp,	$ 50	$3.00
2 Iron pans for sand-bath and water-bath,	75	1.00
3 Evaporating dishes, half-pint, pint, and quart,	1.37	2.15
3 Funnels, glass or porcelain,	60	1.10
1 Quart precipitating jar,	37	37
2 Retorts, half-pint and pint,	75	88
1 Iron retort stand,	1.50	2.00
2 Flasks, for heating liquids,	60	75
1 Pharmaceutical still—tin,	2.50	3.50
1 Porcelain spatula—glass rod and tube,	56	75
2 Files, (rat-tail and triangular,) elastic tubing, &c.,	50	50
	$10.00	$16.00

Of the above, the duplicates may be omitted at the commencement, especially where any deficiency occasioned by breakage can be speedily supplied. The funnels may be omitted if two or more are already in the store, though one of extra size is desirable for percolation in making fluid extracts. The precipitating jar may be substituted by a quart-packing or salt-mouth bottle, if at hand. One retort may suffice, though in making pure and strong nitric acid, a product very desirable in pharmacy, and in many other processes, this implement is important. The tin pharmaceutical still will serve well for making distilled water, rose water, some of the medicated waters, and the distilled spirits, and will soon pay for itself if used only for recovering alcohol

used in pharmaceutical processes. As thus cut down, our list will be as follows:

	Lowest.	Highest.
1 Furnace or lamp, (as above,)	$ 50	$3.00
1 Iron pan, for sand-bath or water-bath, .	40	50
1 Evaporating dish, 1½ pints, ...	50	90
1 Funnel, extra size, ...	40	40
1 Retort, pint tubulated, ...	50	50
1 Iron retort stand, ...	1.50	2.00
1 Flask, pint; 1 porcelain spatula, . .	56	80
1 Pharmaceutical still, ...	2.50	3.50
Files, glass rod, tubing, &c., ...	65	65
	$7.50	$12.25

Representing the least outlay practicable to furnish the necessary apparatus for general manipulation, in addition to those implements indispensable to the retail pharmaceutical shop.

ON DISPENSING PHOSPHOROUS.

BY JOHN FABER.

"What is the most eligible manner of dispensing phosphorus for internal use?"

The U. S. Dispensatory treats the different forms of dispensing phosphorus. It indicates the solubility of phosphorus in ether, alcohol, and oil.

Phosphorus in the form of paste or pill will not keep for any length of time, on account of its tendency to oxydize.

The dragée would seem to be the most elegant form, if accuracy could be maintained with this pharmaceutical confectionary.

The combustible nature of the phosphorus indicates the liquid form as the best for dispensation.

The only improvement I could find seems to be an emulsion made of the phosphorated oil of almonds.

Two drachms of the phosphorated oil were, by the aid of one drachm of gum arabic and one ounce of water, converted into an emulsion, to which one ounce of simple syrup was added, and four drops of the oil of wintergreen to flavor. I send specimen of the emulsion, also of the phosphorated oil, and alcoholic tincture of phosphorus.

OIL OF BENNE. (OLEUM SESAMI.)

BY JAMES T. SHINN, OF PHILADELPHIA.

In the year 1860 when Benne Oil was proposed as a subject for investigation, there was a prospect of its becoming a valuable article of production in the United States. J. A. M. King, of Georgia, had visited Philadelphia with a view of ascertaining what demand there would be for the seed, its value and yield of oil. He brought about three bushels to be pressed, which was done by R. C. Redmond & Co., then linseed-oil workers in this city. The yield was nine and a half gallons, or about forty-eight per cent. of oil, each bushel of seed weighing fifty-two pounds. The above firm had had some experience in cotton seed and peanut oils, to the latter of which the Benne Oil was similar, and they advised the cultivation of the seed as being a profitable crop. The average yield per acre with the careless husbandry of the negroes is about twenty bushels, as stated in a paper presented to this Association at its last meeting by Edward Parrish. This is equivalent to sixty gallons of oil, which, at eighty cents per gallon, the price of peanut oil, would amount to $48.00 per acre, while the cake would probably pay the cost of expressing. Mr. King was convinced that it would be a more remunerative crop than Sea Island cotton, especially on some of the poorer quality of land, and intended to encourage its cultivation in his neighborhood. What the result was is not now known, but the rebellion in the South has prevented our receiving a supply of native grown seed, while the discovery of the petroleum wells in the West may work a revolution in the arts which will seriously affect the use of vegetable animal oils. For the two great purposes of light and lubrication, the mineral product will in time almost entirely supplant the others, leaving for them a demand in the soap and woolen manufacture, &c., and in perfumery and pharmacy.

Olive Oil is more extensively employed in Pharmacy than any other, although very few officinal preparations include it in their formulas. There are in the United States Pharmacopœia, three cerates, two linaments, three plasters and one soap containing it, all of which, except the latter and lead plaster, are comparatively little used, and a few hogsheads of oil would probably supply all

the members of this Convention with a year's stock, so that the importance of the enquiry, "To what extent can Oil of Benne be substituted for Olive Oil in Pharmacy," does not assume very vast proportions. In all the officinal preparations, excepting that of Emplastrum Plumbi, which is the most important of any, it may be substituted with advantage; it unites with wax more easily and uniformly than olive oil, does not become rancid so soon, and may be used in cerates and ointments in place of it. Ceratum Plumbi Subacetatis made with it keeps longer and is more satisfactory in all respects, and if substituted for olive oil in the London formula for Unguentum Hydrargyri Nitratis the result is a beautiful ointment of proper consistence and color.

Benne oil however will not unite with litharge to form a good plaster, for which purpose olive oil is more largely used than any other by the pharmaceutical manufacturer, and therefore fails to be available in one of the most important substitutions. Many experiments have been tried, using various proportions of a litharge which had yielded a good plaster with olive oil, but the results were always unsatisfactory, being entirely too soft for use, although the combination was perfect. One article made a year ago has hardened somewhat on the outside, and might do to spread extemporaneously, but would not answer to spread by machinery on muslin in quantity, as the sheets would adhere.*

It thus becomes important for manufacturers of adhesive plaster to use only unadulterated olive oil; and to test any suspected article, the surest method is to make a small quantity of lead plaster in the usual manner; when the two oils are treated with a mixture of equal parts of sulphuric and nitric acids, the Benne is colored much deeper than the olive, but a mixture containing one-fourth of the former does not show a sufficiently marked result to be guided by.

One of the most important uses to which the Benne Oil can be put, is in the manufacture of soap, on account of the immense consumption of that article, and consequently the large amount of fatty matters required. There is no reason to doubt that it will make a soap fully equal to the Castile, at a much less price, and it

* The reader is referred to the remarks on this paper in the Minutes.

would be substituted for palm oil if produced at a lower figure. The latter now costs the manufacturers in Philadelphia over ten cents a pound, and for commoner soaps they are using an inferior article called red oil, which they say is obtained by saponifying lard with lime and expressing the fluid parts; it is of very dark color and unpleasant odor, and is only preferred on account of its cheapness and would probably be superseded by Benne Oil if that was extensively produced in this country, so as to sell at sixty cents a gallon.

If the oil was carefully and properly expressed it would probably be as bland and inodorous as almond oil, and could be used in a great variety of preparations by the apothecary, in place of the more expensive articles. Though its employment in pharmacy might be small, the demand in manufactures and the arts would probably be great enough to encourage the cultivation of the seed, and make it profitable to the grower. Even if the mineral oils will fulfil a vast number of requirements, there is but little danger of overstocking the world with those of vegetable origin, and an abundant supply of a cheap and superior kind such as Benne Oil, would be an advantage to the community and to the pharmaceutist.

ON A NEW APPARATUS FOR TESTING COAL OILS.

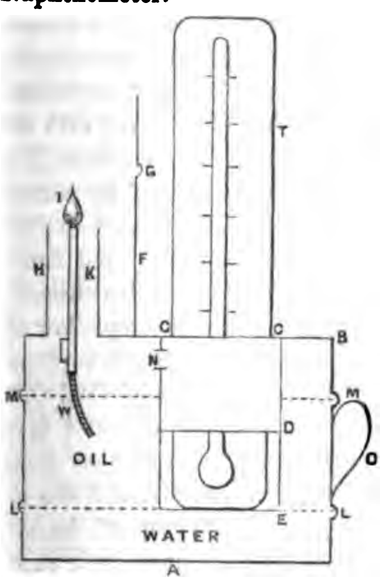
BY EDWARD PARRISH.

The very general introduction of Coal Oils for illumination, and their superiority in point of cheapness and illuminating power over any of the other carbo-hydrogen compounds used for the purpose, make it important that we should possess some means of testing their quality, especially in view of their liability to contain highly volatile ingredients which, by admixture with the air in the state of vapor, may explode and ignite to the injury, not only of combustible materials, but of individuals in their vicinity.

The specific gravity of Coal Oils varies with their quality; that of the rectified oil, suitable for illumination, is usually about 45° Beaumé, or ————, but this may be closely imitated by mixtures of the lighter ingredient known as naphtha or benzine, with the heavy oils used for lubricating. It is to the use of these

mixed products for illumination that we may trace most of the injurious and sometimes fatal accidents recorded in the papers; these generally occur in consequence of the volatility of the lighter ingredient and its diffusion in the air on a sufficient elevation of temperature in such proportion as to create an explosive mixture. Hence, any test of the quality of illuminating oils must rather be founded on their volatility than on their specific gravity.

In order to imitate the circumstances liable to lead to an explosion, and thus ascertain the danger or safety of using any specimen of Coal Oil, the little apparatus here figured has been contrived. It is the invention of Horace J. Smith and Woodruff Jones, whose patent bears date May 6, 1862. It is called the Naphthometer.



A is a cup to contain the oil to be tested, having a tight-fitting cover, B. T, a thermometer passing through the cover. C D is a rectangular tube, supporting the thermometer and dipping below the surface of the oil, M M. N, a small hole in the tube C D, above the oil. D E, a hanging shelf, attached to C D on which the thermometer rests. K is a small tube through which a wick, W, passed. H, a tube surrounding the wick tube open at both ends. F is a screen to protect the thermometer from the flame I. O, a handle to the cup.

The operation of the Naphthometer is very simple. The cover and thermometer being removed, the cup is filled with water to the lower bead L, then the oil to be tested is poured in till it reaches the upper bead M. A wick is adjusted in the tube K, and the cover and thermometer replaced. The small wick is lighted and so adjusted that the flame I shall just reach the bead G in

the screen. The instrument is then placed on the accompanying heater, which has been previously adjusted to a lighted Coal Oil lamp. The rise of temperature is noted by the thermometer. At a certain point, depending on the quantity of benzine or naphtha in the oil, an inflammable vapor will be given off, which is obliged to ascend the tube H, against the flame I, since the cover B is tight and the sides of C D dip below the surface of the oil. The vapor, in the space above the surface M M, however, will not be pure, but admixed with a certain quantity of atmospheric air, drawn in through the hole N, by the draft of the flame I. The reasons for admitting air will be readily understood, by considering the chemical nature of combustible gases and vapors. When such gases or vapors are unmixed with atmospheric air or supporters of combustion, they will extinguish a lighted taper placed in them without burning themselves, but when mixed in proper proportions, the application of a flame causes an instantaneous and complete combustion producing the phenomenon of explosion. In the Naphthometer, the vapor from the oil admixed with air ascends the tube H, and comes in contact with the flame I, a slight puff or explosion is the result: the currents of air caused by this extinguish the flame, thus affording a visible and audible signal to note the temperature by the thermometer. All flame near the heated oil being now extinguished, no accident from it can possibly occur. Thus, by the application of a simple law of physics and a few mechanical contrivances, the dangerous naphtha vapors, which have been the cause of all explosions of Coal Oil, are in this instrument made a safety agent. The object of first introducing the water is to prevent any radiation of heat from the bottom of the cup to the bulb of the thermometer, and also to guard against any excessive heating of the bottom of the oil before the mass is acted on, at the same time the quantity is such that the thermometer is heated entirely by the oil.

The next question is to determine the point which distinguishes a safe from an explosive oil. This is to be done by considering the liabilities and uses to which the oil is to be applied, always remembering, however, that the Naphthometer marks the temperature at which vapors sufficient to explode arise.

In the summer, the thermometer will stand at 98° in the shade,

and Coal Oil, even when sheltered or stored in warehouses, will, under ordinary circumstances, acquire that heat, and it would be hazardous to open the vessel in which it is contained, or fill a lamp in proximity to a flame, with an oil that gave off much vapor at that temperature. Besides, such an oil would be manifestly unsafe to burn in a lamp. After these considerations, it may be safely said that, in summer, *no* oil should mark on the instrument below 100°. In winter, when the extremes mentioned do not occur, the minimum may safely be fixed at 90°. The higher the temperature an oil marks, provided its specific gravity be not too low, the better is its quality.

ON OIL OF SASSAFRAS.

BY A. P. SHARP, OF BALTIMORE.

"What are the principal sources of Oil of Sassafras, its mode of manufacture and the quantity produced annually?"

In answer to the above queries I will state, that upon enquiring among the leading drug houses of New York and Boston, I was informed that their chief supply was obtained from Baltimore, hence I have confined myself in obtaining information in regard to the oil more particularly to that city, although I am informed that considerable quantities of it are carried into Philadelphia from New Jersey, and from York and adjoining counties of Pennsylvania. It is brought into Baltimore by small farmers and laboring men who reside in Baltimore, Carroll and Frederick counties, in quantities varying from fifty to five hundred pounds, and purchased by the wholesale drug houses and agents of northern firms for shipment there.

The mode of manufacturing which I have obtained from different persons engaged in the business, is very simple. The roots are dug during the fall and winter, and after being cut into small pieces are placed in a large tub, (or perhaps, more properly speaking, still,) constructed of oak staves and iron hoops, and usually of the following size: six to seven feet high, six and a half feet diameter at base tapering to five feet at the top, upon which is fitted an ordinary helm connecting with the condenser, which is the com-

mon copper worm. The tub has resting a few inches above the main bottom a false perforated bottom upon which the cut root is placed, until the tub is filled with it, and the helm and condenser properly connected, when a stream of steam from any common boiler is introduced between the two bottoms; this in ascending carries with it the oil, which is condensed in the ordinary manner. The usual yield is one pound of oil from three bushels of the cut root. The quantity brought to market the last year or two has diminished very much from former years, for several reasons. Firstly, the price of the oil became very much reduced, and the increased price of labor induced many to give it up for more profitable employment; and secondly, many of the producers of the oil have joined the army, and hence the amount of oil brought to the market has fallen off very much. I have, however, endeavored to obtain all the information possible, as to what the yield has been on the average for several years previous to our present troubles, and the amount will reach from fifteen to twenty thousand pounds.

There is another fluid obtained from the root by distillation, on which I hope to give the result of some experiments at our next meeting.

ON BRANDY.

BY HENRY F. FISH, OF WATERBURY, CONN.

(Partial reply to query 36.)

It was my intention to have sent to the Association at its present session, papers relating to the subjects submitted to me, by the Convention held in 1860; but slender health and pressing duties have prevented me from entirely completing any one paper. I have copious notes regarding the subject of Brandy, which I think, when properly arranged, cannot fail to be of interest to the Association. I beg to present to the Association, my respectful and sincere apologies. I dare not promise very much; yet if, in the judgment of the Association, it is thought best to continue this subject to me for another year, I think it likely that I may be able to present a paper not unworthy of its consideration. I will remark here, in passing, that the market for French Brandies, presents two different kinds; one of which (and the original

eau-de-vie) is the liquor obtained by the distillation of grape juice, France called Brandy-wine. This article, when it comes from the still, is colorless, and derives its color from the addition of caramel (burnt sugar) and Spanish saffron. It is flavored with vanilla, or balsam of tolu, the essential oil of bitter almonds, and syrup of raisins ; occasionally catechu, or extract of rhatany is added. Its newness is condoned by the addition of aqua ammonia and the watery extract of green walnut shucks, which, in foreign language, gives it *rancio*, (or age). Brandy from inferior vintages, in France, is frequently improved by the addition of prunes, previously bruised, and kept hot in an iron pan. The water in France being notoriously bad or impure, the oak casks, in which the brandy is destined to be exported, are filled with shavings of oak wood ; water is then poured in, and after some days of digestion, the water is decanted, the shavings are removed, and the liquid thus obtained is reserved for the reduction of the high wines from the still. This process, among the French distillers, is called *mouillage, or the softening of the water*, and it is from this source that nearly all the astringency of French brandy is derived. With the exception of specimens of what is called *white brandy*, I have never seen any brandy from France, or any other place, that had not been improved by the resources of science or art. As brandy advances in age, especially when well corked in glass, it generates much acetic, and some œnanthic ether ; it loses a great part of its astringency, nearly all its harshness, and assumes more of the character of the fixed ethers. But the brandies distilled from the spirit of beet root, as well as those derived from corn spirits, exported to France from the United States, contain these ingredients only by artificial admixture, and in this sense, may be regarded as imitations of the genuine Wine-Brandies. Pure French brandy, distilled from wine, may be regarded, chemically speaking, as the *Uni-hydrate of the Prot-Oxide of Eritheregon*, diluted with water, containing more or less natural accumulation of acetic and œnanthic ethers, with the admixture of gallic and tannic acids, and certain flavoring materials. These genuine wine-brandies are rich and strong in flavor and odor, and they impart to water a high degree of compensating taste. On the contrary, brandies made of the spirit of beet root,

or corn spirits, are deficient in what is called *body*; they have no vinous or fruity flavor, they lack the genuine aroma; their astringency, if they have any, is rough and crude. They have not the diffusible capacity of wine brandy, they are hot, pungent and caustic to the taste, they are altogether deficient in the ethereal properties of pure brandy, and cannot be, for a moment, undetected by persons of experience in the trade. In my judgment, chemical analysis does not enable us to detect artificial brandies. The same information as regards the admixture of foreign brandies, is applicable to the artificial brandies made in the United States; with this exception, that the domestic imitations are less successful and less wholesome. The general principles to be deduced from these facts, will be more readily eliminated by the Association, than by myself; and as it is not possible for me to be present at this session, I ask for this communication any discussion, or any suggestion, or any enquiry that may be made by my professional brethren, assuring them, in conclusion, that I will give the subject all the time and all the investigation that it is possible for me to bestow.

ON COMMERCIAL VARIETIES OF ARROW-ROOT.

BY EVAN T. ELLIS.

The query accepted by me was an "An inquiry as to the comparative value of the Georgia, St. Vincent, Bermuda and other arrow-roots, derived from the Maranta arundinacea, whether there is any distinctive characteristics arising from climate, soil, mode of preparation, or any causes that would give a preference to either?"

It is well known to all engaged in the dispensing trade that the Bermuda arrow root has and still maintains the supremacy in the market over all others. It is better than the rest. We all know it is, though I doubt if it is as much superior as its commercial value indicates, but it is probable that the limited production and regular demand has much to do with the price it brings.

There are three points where the Bermuda arrow-root appears to have a claim to decided excellence over the rest.

1st. Its brilliant whiteness, so attractive to the eye and so desirable in all dietetics.

2d. Its delicious flavor, or rather its freedom from any extraneous flavor, also equally desirable.

3d. The density of the jelly is greater than any other variety in commerce.

The first two items are those taken into account in a commercial bill and from all the information I have been able to obtain on the subject there is no doubt in my mind but that the soil and climate of the Island of Bermuda give to the roots of the Maranta there produced the maturity which renders the fecula superior to all others, whilst the care exercised in its preparation and the purity of the water also conduce to the beautiful whiteness of color. Respecting the soil and climate, I can state on the authority of an old resident engaged there in the drug business, who is familiar with the manufacture, that when the roots of the Maranta arundinacea from other islands producing inferior fecula at home, are transplanted to the soil of Bermuda, they render a fecula equal to the best native, and likewise that when potatoes, waxy and inferior, are so transplanted, they become mealy and good.

Respecting the third point, viz., density of the jelly, I am informed from a series of experiments with a great variety of feculas that the Bermuda showed a much higher test than all the rest.

The method of ascertaining this was by treating all the different samples exactly alike, equal quantities with equal amounts of water, and allowing the jellies to cool to the same temperature. Small disks (buttons were used) were placed on the surfaces, which had been previously pencilled over with a camel's-hair brush moistened to prevent any film, and weights added until the jelly could not sustain the disks; the amount of weight sustained by a sample, of course indicated its strength.

The Georgia arrow-root comes next to Bermuda in this respect, and is a good fecula, but it has been heretofore of limited production, and though it has obtained in some localities considerable reputation, especially in Savannah, it has never been in sufficient supply to enter regularly into competition with the rest; of course now it is rather inaccessible.

The St. Vincent comes next to the Georgia, and this seems

the only good variety that is regularly sold in the market, excepting the Bermuda. The market has been well and abundantly supplied, and much of it has been of an excellent quality; it has answered a good purpose, furnishing to many, a pure fecula when the cost of the Bermuda would be onerous.

There are many other varieties of Marenti from other localities—as Sandwich Islands, Florida, Africa, &c., but they are so small a supply and generally so inferior that I do not think it worth while to consume time with them.

In conclusion I may state that there is no reasonable doubt but that the soil and climate of the Island of Bermuda are highly favorable to the maturity of the roots of the Marantas, and that the feculas there obtained do possess distinctive characteristics entitling them to a preference, though, as I mentioned before, I do not think so much so as difference in commercial value would seem to indicate, but such is the esteem and preference given to the Bermuda that it obtains it.

STATISTICS AND ASSAYS OF "VIRGIN SCAMMONY."

BY EDWARD R. SQUIBB, M. D., BROOKLYN, N. Y.

Scammony may be easily obtained in the ordinary drug market at prices varying between fifty cents and eight dollars per pound, and is occasionally met with at nine to twelve dollars per pound. The so-called "virgin scammony," however, in several varieties as "Tchangaree," "Beybazar," etc., ranging between six dollars and fifty cents and twelve dollars per pound, is confined to a few importers, and is not always to be found in quantity. During the years 1860 and 1861, and the first half of 1862, at least one thousand pounds of "virgin scammony" were met with in the New York market, and carefully examined by the writer, the results being noted.

It generally occurs in soldered square tin boxes, containing twenty-five to twenty-eight pounds each, four such boxes being packed in a wooden box for transportation. Occasionally, however, it is seen in round wooden boxes or drums of a similar capacity. The scammony is in irregular, rough and fissured masses of various sizes, sometimes porous, but commonly solid,

hard and semi-resinous, having a tough, dull fracture. It is of a very dark grayish green color internally, often nearly black, but more of an ash color externally. It is rarely dry enough to be pulverulent, yet still more rarely too moist to be rubbed into coarse powder, and it generally loses six or seven per cent. in drying sufficiently to make a fine powder. The amount of moisture is, however, very variable, and thus has great influence upon the percentage of resin.

The appearance of this scammony is tolerably uniform, and it has not a single sensible property which can be relied upon as indicating its true value. The usual mode of assaying it is to select a specimen, rub it to powder, weigh the powder, wash it two or three times with ether, dry and weigh the residue, and having substracted its weight from that of the powder, to call the remainder resin of scammony. This method is not only very inaccurate, but is fraudulent in the results, because all the moisture is knowingly stated as resin of scammony. It is, however, still used to sell by, despite of a knowledge of its inaccuracy.

The method of assay used by the writer, and believed to be simple, easy, and practically accurate, is as follows: Take a very small piece, from one-third to one-half of the lumps of the package, and a little of the dust that is rubbed off by attrition during transportation, and found at the bottom of the box. Powder the whole of this sample, and pass the powder through a small sieve of coarse bolting cloth. If only that portion of the powder, which first and most easily passes through the sieve, be taken, a false result will be obtained; or, if the sample be allowed to lie for a day or two, either powdered or unpowdered, before being weighed off for the assay, the results will be inaccurate from loss of moisture. Mix the whole powder thoroughly, weigh off from it five grammes, put this into a vial of the capacity of 50 cubic centimetres, (29·52 c.c. to the f.℥,) fill the vial two-thirds full of strong ether, cork and shake it well, and then allow it to settle until the solution becomes clear. Decant the clear solution as closely as possible into a tared capsule, fill the vial again with strong ether, and proceed as before. Repeat this washing with ether a third time, and having collected the clear solutions in the capsule, evaporate them to dryness, and carefully heat the

residue in the capsule in a hot air bath to somewhat over 212°. When cold weigh the capsule and contents, subtract the tare and note the remainder as resin of scammony, if the scammony be not adulterated with any other resin. The rule of simple proportion will then give the percentage of the resin, and consequently the true value of the scammony.

Within the period before-mentioned, thirty-four packages of "virgin scammony," representing more than one thousand pounds, have been assayed by the writer, and the results of these are given in tabular form below. At least one-third of the whole number of these parcels were purchased by the writer upon the assays made, and the resin extracted for making compound extract of colocynth; and in these cases the results of the assays were commonly found to be from one-half of one per cent. to one and a half per cent. too low. This may be accounted for by the extraction on the large scale having been made with 95 per cent. alcohol instead of ether, while the general results show the practical accuracy of the method of assay.

No of the Assay.	Date of the Assay.	Source from whence the Scammony was obtained.	Per centage of Resin of Scammony.	
1	1860, Feb. 29,	Schieffelin Brothers & Co.	33·3	
2	Mar. 15,	Jas. S. Aspinwall.	54·9	
3	Oct. 26,	Merrick & Bull.	57·0	
4	" "	Schieffelin Brothers & Co.	33·5	
5	" "	Lazel, Marsh & Gardner.	56·0	
6	" "	Jas. T. Maxwell.	57·1	
7	" 28,	" "	72·1	Special importation.
8	1861, Jany. 22,	Schieffelin Brothers & Co.	65·9	
9	April 18,	Merrick & Bull.	58·0	
10	May 7,	Schieffelin Brothers & Co.	58·3	
11	July 19,	Jas. S. Aspinwall.	28·9	
12	" "	" "	31·8	
13	" "	" "	29·7	
14	" "	" "	32·2	
15	" "	" "	30·0	
16	" "	" "	32·4	
17	" "	" "	41·6	
18	" "	" "	27·9	
19	" 20,	Merrick & Bull.	58·5	
20	Aug. 3,	Schieffelin Brothers & Co.	47·0	
21	Dec. 20,	Merrick & Bull.	79·7	Special importation.
22	1862, Mar. 26,	Schieffelin Brothers & Co.	28·8	
23	" 30,	" "	30·3	
24	" "	"	29·3	
25	" "	"	30·5	
26	May 23,	" "	73·1	
27	" "	" "	62·4	
28	" 30,	Jas. S. Aspinwall.	63·7	
29	June 1,	Schieffelin Brothers & Co.	68·8	
30	" 24,	Merrick & Bull.	45·8	
31	July 26,	Schieffelin Brothers & Co.	42·6	
32	Aug. 18,	Merrick & Bull.	31·7	
33	" "	" "	48·6	
34	" "	" "	25·0	

The assay No. 7 was from a box imported by Mr. James T. Maxwell at the special request of the writer, without limitation in price, and cost here twelve dollars a pound.

The assay No. 21 was from a special importation of four boxes by Messrs. Merrick & Bull, without limitation of price that the writer is aware of. The quantity was 110½ pounds, and the cost was $10.75 per pound. This quantity required 60 gallons of 95 per cent. alcohol to exhaust the powder, and yielded 87½ pounds of resin of scammony. Taking the cost of drying and powdering the scammony, the labor of extraction, the cost of materials used, and an estimated wear and tear of apparatus, etc., the neat prime cost of this resin was $14.21 per pound, or about 89 cents per ounce. This is about the average cost of the resin, but is obtained with less trouble the higher the grade of the scammony. It is, therefore, more economical to buy the higher priced scammony.

The last assays and purchases, though of lower grade of value, were at higher prices from the high rates of exchange and the high tariff, and it is probable that after this time the advance will be still greater, so that the scammony represented in the table will hereafter be obtained only at ten to fourteen dollars a pound.

The regulations of the Treasury Department, under the Act of Congress of 1848, "To prevent the importation of adulterated and spurious drugs and medicines," specify that "scammony, when affording 70 per cent. of pure scammony resin," is alone entitled to entry into the United States. See "Regulations under the Revenue Laws, 1857," published by the Treasury Department, p. 158. From this it appears that while it is legally impossible to have imported scammony in this market below 70 per cent., yet, that in fact, only three samples out of thirty-four, representing one hundred and fifty pounds out of a thousand, could be found within a period of two and a half years, which really came up to the legal standard; and two of these, representing one hundred and twenty-five pounds, were special importations to order, and would not otherwise have come here. These facts constitute a severe criticism upon the way in which the "drug law" has been executed with regard to a very important

drug, and one which is very easily tested. The facts also show that when good scammony is wanted it can, under ordinary circumstances, be obtained at a price nearly corresponding to its true value.

These facts also show conclusively what degree of therapeutic uniformity is to be expected from the use of the best grades of scammony to be found in the market; and the propriety of the step taken by the Committee of Revision of the Pharmacopœia in substituting resin of scammony for scammony in the officinal compound extract of colocynth. The scammony of the forthcoming revision of the Pharmacopœia is required to contain not less than 75 per cent. of resin of scammony to entitle it to be considered officinal.

It appears extremely probable that in the countries where scammony is produced, there is a kind of standard of adulteration, as in the instance of opium, and perhaps other drugs, whereby it is kept within the limits of 45 to 65 per cent., and that higher and lower grades are produced to order, or, which is the same thing in effect, to suit the price limitations which are almost invariably sent out with the orders of the importers.

The statements of the best authorities concur in giving for the concrete juice of the living scammony plant, when properly dried, a proportion of resin varying from 80 to 92 per cent., and it is highly probable that the importers could, if they would, obtain the drug in this condition.

BROOKLYN, August, 1862.

EXPERIMENTS ON THE EFFECT OF BLEACHING PROCESSES UPON SULPHATE OF MORPHIA.

BY EDWARD R. SQUIBB, M. D.

Three years ago, the writer made a statement of his opinion before this Association, that the ordinary bleaching processes were injurious to the therapeutic effects of the alkaloids in general, and especially so to salts of morphia. As this opinion was not concurred in by those for whose knowledge and judgment the writer has great respect, it appeared proper to show that it was

held chiefly on theoretical grounds, and to make some attempt whereby it might be practically either sustained or discarded.

The opinion was based, first, upon the increased doses of morphia salts, now habitually used among physicians, in order to obtain anodyne effects.

Second, upon the experiments of Pasteur and others, upon the changes which occur in strychnia; and third, upon the well-known effects produced by porous spongy bodies, such as some forms of carbon, and spongy platina upon organic compounds in solution.

For the purpose of obtaining definite information upon this point, the following experiments have been made during the past year.

The writer, as a manufacturer, has always sent out salts of morphia unbleached, and rubbed into fine powder, and until the results of these experiments were obtained always several shades darker than the specimen here presented. Large quantities of the unbleached sulphate have been used in the Navy during eight years past, and in the Army for nearly three years, with only occasional complaints, which could be traced to prejudice against the color. More recently, however, when the Army was so greatly increased, three or four very definite expressions of dissatisfaction and complaint were made, one to the effect that Dover's powder had been put up for sulphate of morphia; the second, that the sulphate of morphia was altogether worthless; the third, that four times as much of it was required to produce the effect obtained from that of Messrs. Powers & Weightman, with others a little less definite. Although these statements were too gross for probability, and were all disproved without difficulty, it appeared proper to show, if possible, whether or not the unbleached salt was of inferior value.

Solutions were accurately made by weight, containing sixteen grains of sulphate of morphia in each fluidounce, one solution being made from the bleached sulphate from each of the following makers, namely: Rosengarten & Sons, Powers & Weightman, John H. Currie, and Merck; and one from an unfavorable specimen of the unbleached salt made by the writer, and a portion of that which had been complained of as only one fourth of the proper strength. As this latter made a colored solution, and de-

posited a notable proportion of insoluble coloring matter, the others were made to resemble it in color as nearly as possible, by the addition previous to making up the prescribed weight of the solution, of about two fluidrachms of officinal tincture of opium to each four fluidounces.

These solutions were distinguished only by the letters A, B, C. D, and E, and it is absolutely certain that no one but the writer knew, or had cause to suspect, which was the unbleached salt until all the experiments had been made, and the results stated.

Some accurately graduated minim measures were obtained to administer the solutions by, and one of these with a quantity of the solution of one of the bleached salts, and of the unbleached salt were taken to the Bellevue Hospital, to the Army Hospital at Governor's Island, to the New York Hospital, and to the Brooklyn City Hospital; whilst other smaller quantities were freely distributed for trial.

At Bellevue Hospital, they were carefully and critically used by Prof. Austin Flent, Sr., and Dr. Wm. Hammet Martin, in the cases which came under their care during a period of five months.

Drs. Flint and Martin, for obvious reasons, used them only in cases where anodynes alone were required, and in their notes on the subject, they regret that these cases were so few in number, namely, four cases in all. The solutions were given in doses of five minims, and repeated at regular intervals until the effect was obtained, and then continued during one or more days. Having recorded the effects of one solution during one such period, it was replaced by the other, used in the same way and for a similar period. These observations recorded, the first solution was again used, and so on.

Both gentlemen decide that so far as they can judge from their limited number of cases, the solutions are equally efficient.

At Governor's Island, (Fort Columbus,) they were carefully used by Surgeon W. J. Sloan, U. S. Army, during six months, but only in the ordinary routine of hospital practice, Dr. Sloan having had no cases which were adapted to prolonged and alternate use. Dr. Sloan believes the solutions to be of equal efficiency, though he observes that one became mouldy before it had been long in use.

From the New York Hospital, and Brooklyn City Hospital, no reliable reports could be obtained; nor could any available data be had from other sources.

It is to be regretted that after no little pains and trouble taken, so few useful results could be obtained, and the writer feels the more obliged to the three gentlemen, Drs. Flint, Martin, and Sloan, who not only undertook cheerfully this amount of pains and trouble, but who also accomplished the object in view. These observations, so far as their limited numbers go, entirely fail to prove that the processes of bleaching materially impairs the therapeutic value of sulphate of morphia. Deductions from them, however, show equally, at least, that bleaching does no good in a therapeutic point of view.

As the unbleached sulphate of morphia from which the solution for comparison was made, contained not less than one per cent., nor more than two and a half per cent. of insoluble resinous matters; and as the solutions of bleached sulphate of morphia all contained a small portion of tincture of opium in addition to the sulphate of morphia, it follows that these latter solutions must all have been more than one per cent. stronger than the solution of the unbleached, and should therefore have given somewhat better results. But as differences so small could not be appreciated in so limited a number of cases, if at all in therapeutic application, the results are not considered conclusive as a negative, though they fail to prove an affirmative decision, and the writer, therefore, does not yet abandon the opinion which he has failed to establish by evidence. It is certainly proper to separate the insoluble resinous matters much more perfectly than was done by the writer in his earlier experience with the salts of the alkaloids, but this can be done by means of alcohol and recrystallization without the use of the ordinary bleaching process. The competition of the market in this, as in many other instances, is based first upon the price, and next upon beauty of appearance, whilst therapeutic value is rarely considered until it is proved to be deficient.

Then, as the experience detailed in this paper shows how difficult it is to prove a deficiency, the writer may possibly be excused for still believing, in opposition to the common judgment, that

the quality of extreme whiteness in alkaloids and their salts is altogether fictitious.

One collateral point worthy of notice has been shown in these experiments, and that is that solutions of bleached sulphate of morphia are liable to mould and become ropy by keeping, whilst that from unbleached sulphate is but little, if at all liable to such changes. This difference is supposed to be due to the use of animal charcoal not perfectly burned, traces of animal matter, thus getting into the solutions render these more liable to decomposition.

This, however, is not a practical objection to the bleached salts, because it is very easily prevented by the addition of a small proportion of alcohol.

Brooklyn, N. Y., August, 1862.

ON THE ACTIVE PRINCIPLES OF VERATRUM VIRIDE.

BY G. J. SCATTERGOOD, PHILADELPHIA.

"Is the sedative action of Veratrum Viride due to the veratria known to exist in it, or is there another principle contained in the root to which the action is due?"

In order to decide this question I have attempted to isolate the active principles of the root, and to try their effects separately upon the animal system.

These appear to be Firstly: Veratria. Secondly: An alcoholic resin.

They are obtained in the following manner: The finely ground root is exhausted by the smallest possible quantity of strong alcohol. This tincture is slowly poured into a larger bulk of water, and the mixture exposed to a gentle heat to drive off the alcohol. When this is done, the liquid is raised to the boiling point, and immediately filtered. The resin remains in the filter, while the veratria which appears to exist in this drug in a form soluble in boiling water, is found in the filtrate, from which it may be precipitated by the addition of ammonia. The alkaloid thus obtained is contaminated by another substance of a similar nature to veratria, but insoluble in ether, from which it may

be separated by treatment with that menstruum, the veratria being left upon its evaporation, of a yellowish color—requiring further purification. The other substance remains in the residue, and may be extracted from it and obtained in the form of a brownish adhesive mass, by the action of strong alcohol. It is somewhat soluble in water, but precipitated from its aqueous solution by muriatic acid. This solution froths considerably when shaken—Sulphuric acid is colored orange yellow by it. Muriatic acid a delicate red. It appears to be a compound of ammonia with one of the organic acids derived from the root. Its medicinal effects were not examined.

The medicinal properties of the two active principles before allu led to have been tested principally by experiments upon dogs. In this part of the examination I have been very much assisted by Dr. Saml. R. Percy, of New York, who has kindly tried several experiments at my request, and furnished me with a detailed account of them. As this shows the effects of these two articles in a form very suitable for comparison, it is here subjoined without much abridgement.

Exp. 1. One-third of a grain of veratria prepared from the Veratrum Viride was given to a large dog weighing about 30 lbs. in gelatine capsules, care being taken that none of it escaped.

At 3·35 P. M., pulse 150. 4·00 P. M. salivation very profuse, pulse 148. 4·05, vomiting produced. 4·20, vomiting continues very frequently, pulse 140. 4·45, vomiting viscid mucus and bile, pulse 128. 5·20, prostration very great, unable to stand, pulse 122. 5·45, pupils widely dilated, eyes fixed, pulse 122. 6·00, prostration great, profuse salivation, pulse intermittent. 9·00, walking about, but very sober and dejected, pulse 112.

Three days afterwards the same dose was repeated to this dog, with very similar results. The pulse was not much depressed, the prostration was very great, and there was almost total loss of power in the voluntary muscles.

Exp. 2. To a dog weighing 20 lbs. 1½ grain of the resin dissolved in alcohol was administered. At 11 A. M., pulse 144. At 12, salivation produced, pulse 124. 12·20 P. M., pulse 96. 12·25, vomited many times,·the vomited matter being viscid and ropy, pulse 80. 12·50, pulse 80. 1·10,

pulse 74. 1·40, profuse diuresis, no dilation of pupils, pulse 70. 3·35, P. M. quiet, pulse 40.

Exp. 3. Half a fluid-dram of the tincture of the resin of Veratrum Viride, containing one and a half grains, was thrown by hypodermic injection into the side of a large dog weighing about 30 lbs. at 11·45 A. M., pulse 165. 11·56, saliva flows freely, purged, restless, pulse 106. 12·05 P. M., vomiting frequently, viscid mucus and bile 12·15, purged again, vomiting, pulse 60. 12·30, pupils widely dilated, vomited clear bile, pulse 52. 12·40, made an incision down to the femoral vein to which he made no resistance and seemed to be unconscious of pain, pulse 41. 12·44, injected 20 minims into femoral vein, death was almost instantaneous. Both sides of the heart were *full* of bright chocolate colored blood; the liver was gorged with dark blood, mucus coat of the stomach was greatly congested, the other organs were healthy.

Exp. 4. Half a fluid-dram of the tincture of the resin Veratrum Viride containing one and a half grains, was thrown into the stomach of a dog weighing about 25 lbs. at 11·15 A. M., pulse 140. 12·10 P. M., additional 20 minims were given, equivalent to one grain of the resin, pulse 117. 12·20, free salivation, pulse 110. 1·00, vomited many times in quick succession, the matter last thrown up being tough and ropy, and containing mucus and much bile, the vomiting was painful and prostrating, pulse 80. 1·15, pupils fixed, pulse 76. 1·45, profuse diuresis, and salivation, pulse 72. 1·47, vomiting mucus and bile, pulse 72. 3·30, sleeping, pulse 70.

The foregoing experiments upon dogs of about the same weight indicate a very great similarity in the general therapeutic properties of the alkaloid and the resin. In each of these cases a great increase of the saliva, prolonged emesis, general prostration and reduction of the pulse were produced; and in every case but one dilatation of the pupils also. But it will be noticed that this reduction of the pulse, was much greater in those cases when the resin had been administered, than in that in which the alkaloid was given. In the former being from 165 to 41; from 144 to 40; and from 140 to 70; while in the latter it was reduced from 150 only to 112. In another instance in which the same alka-

loid prepared by Dr. Percy, by purifying the commercial veratria, was administered in the dose of one-third of a grain, to a dog weighing 25 lbs. the pulse was likewise only moderately reduced, viz: from 132 to 100, the attendant effects being very much the same as those just described.

Judging from these parallel experiments, and from the fact that the resin exists in very much larger quantity, than the alkaloid, in this drug, it would appear that the sedative action of Veratrum viride is due in greater degree to the alcoholic resin it contains than to its veratria.

I may add that the action of the resin upon the human system, produces results very similar to those just described. On the 14th inst. at 5·15 P. M., I took two grains of the alcoholic resin. Pulse 80. At 6·45, its effects were first apparent in slight spasmodic contractions of the muscles of the leg—these soon passed off and were not afterwards noticed. At 7·45, free vomiting began, accompanied with an increased flow of saliva and general perspiration; the vomiting continued at intervals for upwards of an hour, and until considerable bile had been thrown up; and was followed by painful retching: at 8·45, pulse 60—by this time the feeling of warmth had been succeeded by general coldness of the body and loss of strength. At 9·15, pulse 55. At 9·30 fell asleep. The only effects observed in the morning were general weakness, and a somewhat depressed pulse. No tingling of the skin so frequently occasioned by veratria, nor catharsis were produced.

The resin thus experimented with is of a soft consistence, and of a mild, oily, though nauseous taste at first, but leaving after some time a somewhat acrid sensation in the fauces. It is of a brownish-black color. It yields to ether its more oily portion, about one-quarter its weight,—the remainder, insoluble in that menstruum, is left of a harder and more friable consistence. In order to remove any suspicion that the medicinal action of the resin was due to a minute quantity of the alkaloid remaining in it, I administered three-quarters of a grain of the residue left after treating the alcoholic resin with ether, (which would have removed any veratria if present,) to a half grown cat. Its effects were very similar to those of the alcoholic resin before mentioned,

vomiting, dilation of the pupils, slight spasms of the muscles, slow breathing, and reduction of the pulse from the neighborhood of 100 to 42, were produced on the course of a few hours.

The quantity of resin obtained from 1 lb. avoir. of the dried root of Veratrum viride may be stated at about 300 grains—of Veratria about 30 grains. From its reaction with sulphuric acid, the tinct. iodine test, and a solution of the iodo-hydrargyrate of potassium, I am of the opinion that it may perhaps be an altered form of veratria. I have not succeeded in detecting the presence of sabadillia. The existence of jervia in the filtrate from which the veratria was precipitated, was thought probable from the white precipitate which was produced in it upon the addition of sulphuric acid.

ON AMERICAN TARTAR.

BY W. J. M. GORDON, OF CINCINNATI, OHIO.

At the last meeting, the following question was submitted to me, "What are the probabilities in favor of tartaric acid and tartar becoming commercial products of the Ohio Valley?"

There has been no attention given to the deposit of tartar by the wine growers in the Ohio Valley up to the present time, although to judge from representations of those who have wine cellars, a large amount of tartar could be collected. I have determined, as soon as I can ascertain the average value of the tartar produced here, to offer to purchase all that I can obtain; by this means, no doubt, I shall soon arrive at a definite conclusion, and should it be thought worth while to continue this subject to me, I can at another meeting answer it with some certainty. With this you will find a letter I received from the President of the Wine Growers' Association, under date of April 12th, 1862, which contains some matter of interest.

"Mr. Wm. J. M. Gordon:—

Dear Sir,—Your first communication on the subject of Cream of Tartar produced in the Ohio Valley, addressed to me as the President of the "American Wine Growers' Association," was

laid before the Association at the last meeting, and information elicited from the members present. They concurred in the reply that no attention has been paid by wine growers to the manufacture of tartar, or the collection of the crude tartar deposited in their casks.

The customary mode has been, when changing wine from one cask to another, to clean the casks, and no care has been taken of the dregs, or what they considered the useless deposit of tartar in the casks.

We cultivate in Hamilton county about 4,000 acres of grapes. The product of small vineyards is generally sold to dealers in wine the first year after pressing, consequently but a small quantity of tartaric acid would accumulate in the casks. The manufacturers of champagne wine use large quantities of one and two years' old wine, which is taken from the casks and put into bottles; of course this would prevent the accumulation of tartar. The only plan of calling the attention of the wine growers to this subject is to have some authorized person to offer a certain price for the crude tartar, thus by showing the wine grower or wine dealer that some profit may be derived by saving the tartar and the refuse of his wine casks, he might then be induced to collect and save what is now considered useless.

The principal wine growers in this county, and those who have large casks in their wine cellars, are: Longworth, Bogen, Yeatman, Werk, Mosher, Mottier, Duhme, Williamson, Hodge, and others who might find it to their advantage to save the tartar of their casks, and thus establish a nucleus for enlarging the collection of larger quantities, until some one would be induced to manufacture the cream of tartar sold in the shops.

I believe that this subject is worthy of the attention of the wine growers of the Ohio Valley, and that any mode proposed, by which the wine dealer, could see a profit derived from his labor, in saving that which is now thrown away, that he would of course assist in promoting the manufacture of cream of tartar, thus releasing us from a dependence on the wine districts of Europe for this article of commerce.

The destruction of the grapes of this region this season, by the mildew and rot, has discouraged our wine growers, and it is an

unpropitious time to suggest experiments, or to undertake any expensive improvements connected with the cultivation of the grape.

I am, sir, very respectfully your obedient servant,

GEO. GRAHAM,

President of the American Wine Growers' Association.

ON CANTHARIS.

BY FRANKLIN C. HILL.

Several species of Cantharis found in the United States, as C. vittata, C. atrata and C. cinerea are known to be at least equally powerful with C. vesicatoria. It is even asserted that they are so much more powerful as to be dangerous, though this is doubtful, the fact probably being that they have been used in a fresher state than that in which the foreign article can be obtained, and, possibly, unskilfully exhibited.

The number of species of this and the allied genera Meloë, Mylabris, &c., distributed over our territory is very great, but I have failed to find any author, excepting the late Doctor Harris, who has thought their habits and properties worthy of notice, and his observations were necessarily confined to the species of New England.

Audoin has left us (Ann. des Scien. Nat. t. ix.) an invaluable history, commercial, therapeutic, anatomical, and social, of the C. vesicatoria, but as yet we have no naturalist equal to the same labor of love for our native species.

Agassiz complains that our young naturalists study structure and classification to the exclusion of equally valuable branches, and warns them of the injury they are doing to science by it, and Emerson sneers, not without reason, at modern botany, as consisting wholly of Latin names; he might have said, bad Latin.

Since accepting the task assigned me, I have found my time too fully occupied with other matters, to make original observations of any value. In fact but one species, C. atrata, has come under my observation at all.

These may be found at this season in considerable numbers on

the blossoms of the solidagos, or on the China asters, which they infest and destroy. From observations made on the species last summer, I should judge that the amatory process so graphically described by Audoin, is generic, at least the initiatory performances, which were all I saw, were the same.

Commercially the subject is not worth consideration. On the prairies of Illinois, I have often held four species in my hand at once, but all that I saw in the West would not amount to more than a few ounces weight, and, were they as plenty as mosquitos, when harvest hands are paid two dollars a day, no collector could compete with the foreign article at present prices.

PHOSPHOMOLYBDIC ACID AS A TEST FOR ALKALOIDS IN MEDICINAL PREPARATIONS.

BY FERD. F. MAYER, OF NEW YORK.

As one of the questions allotted to me at the meeting of this Association in 1860, stands on your list an inquiry into the practicability of a volumetrical assay of the narcotic extracts by means of the test known as phosphomolybdic acid, generally called Sonnenschein's test, and the paper which I present to you at this meeting is an attempt at a reply thereto.

At the time when I undertook this reply, I was not aware that another chemist had been engaged on the same subject, and in the same direction, nor what results he might have arrived at. But as I was informed last year by Prof. Maisch, a pupil of his in Philadelphia, Mr. Hayes, of Georgia, had undertaken to examine the value of phosphomolybdic acid for the same purpose. Prof. Maisch could not, however, give me any data as to the conclusions Mr. Hayes had arrived at, and being unable to communicate with the gentleman, as well as unwilling to deprive him of the merit belonging to him, I concluded upon entering only into a general examination, the more so as I have never been very favorably impressed with any belief in the practicability of the test for volumetrical analysis.

For, the relative value of a method of wet assay depends not so much on the extreme nicety of the reaction which is required in

chemical analysis by weighing; but in the readiness of the means with which the reaction is brought about. Another requisite of a volumetrical method is that the assay be not interfered with by other ingredients of the liquids acted on, which might produce similar results or render the reaction indistinct.

It always appeared to me that phosphomolybdic acid was inapplicable for every one of the reasons just given.

This compound was introduced by Struve and Svanberg, as a test for the presence of ammonia in acid liquids, and to this day is used for that purpose, as is the molybdate of ammonia in testing for phosphoric acid. Its preparation, quoting Sonnenschein, is as follows:

"Molybdate of ammonia is precipitated by common phosphate of soda; the yellow precipitate, after being well washed, is suspended in water and heated with carbonate of soda until dissolved. This solution is then evaporated to dryness, and calcined to drive out every trace of ammonia. In case the molybdic acid should in part have been reduced during this process, the whole must be moistened with nitric acid, and again calcined. The resulting salt, when cool, is then warmed with water; nitric acid is added in excess, and the strongly acid solution diluted with water, in such a proportion that the resulting liquor should contain 10 per centum of the dry salt. The golden colored liquid must be kept from the influence of ammoniacal vapors."

After this reagent had been established by Sonnenschein as a test for ammonia or any of its salts, De Vrij, in 1853, first noticed that it produced a similar reaction, not only with ammonia, but also with alkaloids, and in 1857, Sonnenschein without crediting De Vrij, published the same as an extension of the original test, for the determination of the amid-bases derived from ammonia, as well as all the alkaloids, which had come under his observation, (*Ueber ein neues Reagens auf Stickstoffbasen, Berlin, E. Kuhn*, 1857,) and an abridged account of his paper was republished in the *London Pharmaceutical Journal*, and the *American Journal of Pharmacy* for 1858.

As regards delicacy of reaction this test leaves nothing to be desired, and is in this regard exceeded only by Scheibler's metatungstic acid.

Not to mention, however, the costliness of the reagent in either case, which would in itself be sufficient, to preclude its adoption for general analysis, there is one great objection to its use, and this objection in all probability has prevented Sonnenschein from giving the quantitative application of the test which he promised when publishing the qualitative—it is, that a precipitate with phosphomolybdic acid always leaves us in doubt as to whether it be caused by an alkaloid or by ammonia, or one of its compounds; appearance, texture and color in nearly all cases differing very little, which difference in colored solutions amounts to nothing.

This I consider the fatal objection to the reagent in its application for the testing of narcotic extracts. An extract containing as much of a salt of ammonia as it should of its proper alkaloid, if phosphomolybdic acid were used for quantitative precipitation, would show the same strength as a good extract. There would therefore be no safeguard against error or fraud. But it is a question as yet whether of all narcotic extracts, and extracts generally containing nitrogenous compounds, ammonia or some of its salts does not form a constituent.

We know how liable the alkaloids of Belladonna, Stramonium, Conium and Hyoscyamus, are to decomposition during their preparation, and that ammonia is always a product of such decomposition; and it may be safely assumed that it is a constituent of all narcotic extracts—preparations, which have to undergo so much manipulation and exposure to extraneous influences.

An experiment made in this direction gave me a doubtful result; but as the method employed is capable of improvement, and the point well worth examining, I can only promise to continue the experiments.

A few grammes of Extr. Belladonnæ (English,) diffused in water, were mixed with dilute caustic soda lye, and placed in a flask, through the cork of which passed first a tube conveying a current of washed hydrogen gas, and secondly a tube provided with a large bulb, the upper end of which was connected with a bent tube passing into a flask with dilute nitric acid.

The purpose was to obtain, if possible, the most volatile product

of the action of the caustic alkali on the extract in an atmosphere of less density than that of the atmospheric air, free from the products of that action at a higher temperature; the bulb tube to retain anything condensible, other than gas.

Belladonna and its extract, when mixed with a fixed alkali, evolve an odor closely resembling that of conia. The current of gas after passing through the bulb tube, but before reaching the acid, possessed the same odor and gave white fumes with acetic acid, and the nitric acid into which the gas was afterwards conducted for a considerable length of time, gave a faint reaction with phosphomolybdic acid. The question is therefore unsettled, whether these fumes with acetic acid arise from ammonia, or from the substance which causes the narcotic odor of the extract and of impure atropia; and my experiments in that direction are not yet concluded.

The third objection, and which relates especially to the application for which the test is wanted, is that phosphomolybdic acid, when brought into a solution of an extract, however the same may be acidulated with nitric acid, is decomposed, the green modification of molybdic oxyd being one of the products, which produces not only a green precipitate, but also a deep green, cloudy liquid in which no test-reaction can be observed with any degree of safety. The action of the saccharine or mucilaginous constituents of the extracts is in this case similar to that of most other deoxydising agents, but appears not to be overcome even by the presence of nitric acid.

For one purpose, however, and this is one of the applications I believe Mr. Hayes has made of the test, it may be valuable to the pharmaceutist; this is in determining during displacement or extraction of a vegetable drug, the point of its exhaustion. In liquids containing but little extraneous organic matter, the reaction, after acidulating with nitric acid, shows itself distinctly enough; but in such where the organic non-nitrogenous matter preponderates, phosphomolybdic acid cannot be used at least as a quantitative test. These we may presume are some, if not the principal reasons, why the test has not been further extended in its application.

NEW REMEDIES AS EDUCATIONAL MEANS.

BY EDWARD PARRISH.

Whatever may be the conservative proclivities of individuals, and however some may deprecate the disposition to grasp at the new and unknown, in preference to what time has sanctioned and experience confirmed, all must admit the love of novelty as a potent influence in human nature. In every department of social, civil, and political life, the fashion of the hour leads captive the unthinking, impulsive, throng.

This is true in medicine, as in every profession, and hence, from a business point of view, it would seem to be the interest of the physician and pharmaceutist to adapt themselves, as far as they consistently can, to the various currents of popular favor. True it is, that this consideration is abundantly qualified by others; there are counter-currents as well as currents in these surface movements of fashion, and he who will yield himself to either will often encounter the other to his cost. The man who would sell himself out to quackery, cannot, of course, claim to maintain a respectable position among his professional compeers, while the honest conservator of the public health must be content with the thrift that follows industry and economy.

I would not, by this somewhat irrelevant remark, imply that quackery is necessarily connected with a due attention to the demands of public opinion. A broad and deep philosophy has sought, with success, for relations between the ever-shifting phases of the public thought, and that gradual progress of our race by which it tends slowly and surely, though not without many diverging and retreating movements, toward a richer and more mature experience and a higher civilization.

Science itself, the embodiment of classified knowledge as constantly elaborated through thousands of toiling brains, is not free from the influence of shifting opinions and doctrines. Each great discovery, like some new force let loose in the universe of mind, shoots athwart the beaten track, driving off their wonted course the time-honored ideas and deep-rooted prejudices on which the whole fabric of human knowledge seemed to rest, till in process of time the faithful conservators of the truth seek out and indicate

the altered course by which the onward and upward current seems to tend toward the haven of truth. What is thus true in the aggregate, is equally so in the smallest detail. No art or applied science can stand still if it possesses the least capability of progress; added knowledge brings more enlarged ideas, and ideas continually reproduce their kind, spreading the domain of knowledge indefinitely.

The subject allotted to me is thus presented in its general relations; to illustrate it specially, I might detail some of the results which have followed the introduction of any new remedy of note during my own experience. I believe it would be found that each has stimulated scientific inquiry, and led to an advance in knowledge among pharmaceutists.

The phosphates were little regarded by pharmaceutists ten years ago, either from a chemical, or pharmaceutical, or business point of view; few had more than a specimen of the acid in their shops, and of the salts, phosphate of soda, sometimes prescribed as a mild cathartic, was the only one commonly met with. Through the prescience of an able therapeutist in Philadelphia, the eligibility of some of this class of salts as nutritive tonics, calculated to supply the waste occasioned by protracted disease, came to be recognized, and the demand for soluble preparations apportioned to the requirements of practice, was met by the ingenuity of some of our pharmaceutists. *Now* phosphoric acid occupies a conspicuous place in our *materia medica.* The commercial imported acid has been the subject of analysis, methods have been invented for converting one of its allotropic modifications into another, formulas have been contrived for its convenient preparation in its officinal diluted form, the effect of ignition upon its salts, the methods of increasing the solubility, and otherwise modifying the properties of these, are all familiar to every intelligent pharmaceutist, while perhaps nearly all physicians who are at all disposed to try the new and improved remedies have given to some form of phosphated tonic their approval, at least so far as to prescribe it when obviously indicated.

In the meanwhile, the phosphates have been acquiring increased popularity as tonics for the earth and its vegetable products, and in the form of manures these indispensable ingredients of food

are being abundantly supplied to the cereal grasses upon the seed of which we feed. Can it be supposed that these necessarily related facts have failed to add interest to the phosphates, and to teach us all, the intimate relations of our art to the great science of Physiology?

The hypophosphites have come into use as new remedies still more recently, and although their exaggerated pretensions to rank as specifics against the great scourge of our race have not been fully sustained, yet they have assumed a legitimate place among our chemical products, and the study of their modes of preparation, properties and uses has added to our acquaintance with the facts of chemical science.

Each new scientific fact acquired is a stepping stone to many others, so that it is impossible to estimate the growth and multiplication of our knowledge through the study of new subjects which present themselves in the course of our business. Perhaps few pharmaceutists appreciate the mental stimulus thus continually furnished by the experiments and discoveries almost necessarily pressing themselves into the range of their observation and experience. Some are doubtless reconciled to moderate pecuniary returns from business pursuits which furnish them pure and elevating pleasures, independently of the ordinary social and merely recreative pastimes.

A historical view of the progress of scientific knowledge will furnish a confirmation of the conclusions thus drawn from our individual observation; formerly, all remedies have been new remedies, and the requirements of medical practice, as well as other known or suspected uses, have stimulated investigation into their properties. Thus the innumerable Botanical, Chemical and Pharmacological facts which make up our science have been accumulated, till their increasing number and variety have reudered it necessary that they should be systematized and subjected to the severe tests of scientific scrutiny. Thousands of investigators in the lapse of centuries have entered into this labor with no thought of other reward than the meed of well deserved praise, and the pleasure realized from the full exercise of the high faculties of observation, comparison and thought. It is our high

privilege to claim companionship with these, and as we progress in the development of the fields which are everywhere white unto harvest, we shall win a place on the roll of benefactors of our race.

ON CHESTNUT LEAVES IN WHOOPING-COUGH.

BY GEORGE C. CLOSE, OF BROOKLYN, N. Y.

I wish to call the attention of members of the Association to an article, not recognized in the Pharmacopœia, and the use of which as a medicine has only recently come to my knowledge.

This article is the leaf of the common chestnut tree, (Castanea vulgaris.)

Having a child whom I supposed to be affected with incipient whooping-cough, I asked a prominent physician of New York, who has had an extensive practice for more than thirty years in the city, what he thought was the best remedy for whooping-cough? He answered, chestnut leaves are by far the best remedy I have ever met with. Upon this, I immediately commenced giving to the child an infusion of the leaves made with boiling water and sweetened with sugar. She drank it freely and without objection, the taste not being unpleasant. The cough, which had continued for two weeks, and was evidently growing worse previous to giving the remedy, was immediately relieved, and after two or three days ceased entirely, and has not returned though several months have passed.

Since making this trial, when asked by customers, "What is good for whooping-cough?" I have advised them, if they had no physician in attendance, to try the leaves. In several instances after trying them, they have reported to me that "they acted like a charm," and gave immediate and great relief.

I have also heard of cases of adults, who were affected with that kind of spasmodic cough, which is sometimes caused by some (perhaps slight) source of irritation in the throat, being immediately relieved by the same remedy.

As I have occasionally calls for chestnut leaves, I asked a person who applied for them a few days since, for what purpose he

used them? He replied, as a remedy for whooping-cough, for which they were very good, and that they often relieved other kinds of cough also. This shows that their use is becoming somewhat popular as a domestic remedy.

A very extensive use of an article is required, however, to test its real value as a remedy, and I only present the foregoing facts as warranting, in my judgment, farther trials of the leaves.

I also present a specimen of the dried leaves procured green and cured by myself, and a sample of fluid extract made from the powdered leaves in the usual way, using diluted alcohol as a menstruum.

Although the use of chestnut leaves as a remedy is new to me, it may not be to all the members present, and if any of them can give further information upon the subject, I hope they will do so for the benefit of the Association.

ON COTTON SEED OIL, (OLEUM GOSSIPII.)

BY WILLIAM J. WATSON, OF BROOKLYN, N. Y.

"Cotton seed oil, the expressed oil obtained from the seeds of Gossypium herbaceum, being easily obtained, and at a low rate: Are there any therapeutic objections to its being substituted for olive oil, in pharmaceutical preparations?"

Introductory to the above question, the writer would state that refined cotton seed oil can be obtained in the New York city market, at an average price of 95 cts. per gallon; about one-half the price of good olive oil. Upon inquiring among the dealers in the article, I am informed that immense quantities of the seed are allowed to rot, or used only as manure, on the cotton plantations, and they believe, that if there was sufficient demand to make it an object to manufacture it on the plantations, that the price would fall fully 25 per cent.

The oil experimented on was the ordinary commercial article, known as refined cotton seed oil; further purified with animal charcoal.

I have used the oil during the past year in the following preparations, and have found it a good substitute for olive oil in every

respect; with the exception of a slight odor which it retains, even after maceration and filtration through animal charcoal.

Emplastrum Plumbi. A longer time is required for completing the process than with olive oil.

Linimentum Camphoræ. The camphor is perfectly soluble and a handsome preparation is obtained.

Ung. Aquæ Rosæ. A very white smooth ointment can be obtained, which keeps well, care being taken to stir constantly until cool; the addition of two or three drops of oil of rose to the pound covers any odor of the oil which may remain.

Linimentum Ammonia, is not so thick as when made with olive oil, and is much easier to pour out of the dispensing bottle in cold weather.

The writer thinks from experience that cotton seed oil purified as stated above, may be safely and economically substituted for olive oil in the manufacture of all Liniments, Plasters, Soaps, &c., but would not advise its use in any preparations for the hair, as it is found by experience to be of too drying and heating a nature.

A sample of the commercial refined oil, and the oil purified by animal charcoal is submitted for examination.

SOME REMARKS ON A SYSTEMATIC QUANTITATIVE TESTING OF ALKALOIDS.

BY PROF. FERD. F. MAYER, OF NEW YORK.

The question given to me at the last meeting of this Association in regard to the testing of narcotic extracts by phosphomolybdic acid, was entered upon early enough to determine its inapplicability for the purpose, but too late to carry out the subject fully in a different manner.

Owing to the small amount of alkaloid in any of the preparations or drugs containing substances of that class, a quantitative determination by weighing, if not an unsafe test, is a very tedious operation, and like most testing processes of the kind, it will have to be replaced by a volumetrical method. Of such a one it is required that it be founded on a test characteristic

only for alkaloids, delicate enough for ordinary purposes, and which can be readily and cheaply applied in ordinary menstrua, and should not be interfered with by the common ingredients of extracts or similar preparations.

The iodohydrargyrates or bromohydrargyrates of the alkalies appear to answer this purpose. They were first introduced as qualitative tests for alkaloids by Von Planta, in 1846; but in 1858, Thomas B. Groves noticed the similarity in the composition of some of the iodohydrargyrates of the alkaloids, which led me to apply them for volumetrical testing with success, but with results differing from those of Mr. Groves.

Iodohydrargyrate of potassium, or rather a solution of corrosive sublimate in iodide of potassium, is not affected by tannin, albumen, starch, sugar, gum, coloring matter, gluten, mineral acids, or alkalies, though of course, it is decomposed by sulphydric and cyanhydric acids.

It forms precipitates with all vegetable alkaloids, and with ammonia and its derivatives in presence of a fixed alkali, (Nessler). These precipitates are similar in their composition to those produced by chloride and cyanide of mercury: the proportion of mercury they contain varies, being from one to six equivalents. The equivalent quantity of a tenth normal solution of iodohydrargyrate of potassium (13·55 grammes corrosive sublimate and 49·8 grammes iodide of potassium to one litre) was determined by adding it gradually from a burette to a measured quantity of a solution of the alkaloid in 100 parts of dilute acid, and determining the end of the reaction by testing on a watch-glass.

It was thus found that—

	Equivalent of Mercury.
An equivalent of Aconitia ($C_{60}H_{47}NO_{14}$) = 533 requires	1
Berberia ($C_{42}H_{19}NO_{10}$) = 365	1
Berberiæ Murias (BerbHCl+4Aq) = 437.5	1
Atropia ($C_{34}H_{23}NO_{6}$) = 289	2
Atropiæ Sulphas = 314	2
Strychnia ($C_{42}H_{22}N_{2}O_{4}$) = 334	2
Strychniæ Nitras = 397	2
Brucia ($C_{46}H_{26}N_{2}O_{8}$) = 476	2

		Equivalent of Mercury
An equivalent of	Bruciæ Sulphas = 506 requires	2
	Narcotia ($C_{46}H_{25}NO_{14}$) = 427	2
	Veratria ($C_{64}H_{52}N_2O_{16}$) = 592	2
	Morphia 2($C_{34}H_{19}NO_6$) = 606	3
	Morphiæ Sulphas = 758	3
	Conia ($C_{16}H_{15}N$) = 125	3
	Nicotia ($C_{20}H_{14}N$) = 162	4
	Cinchonia 2($C_{40}H_{24}N_2O_2$) = 616	6
	Cinchoniæ Sulphas = 750	6
	Quinia 2($C_{40}H_{24}N_2O_4$) = 648	6
	Quiniæ Sulphas = 872	6
	Quinidia 2($C_{40}H_{24}N_2O_4$+4Aq) = 720	6
	Quinidiæ Sulphas = 854	6

The mercury consumed for some of these reactions remains partly in solution. The ultimate composition of all these precipitates is yet under consideration, as also the relation of the test to the other alkaloids.

I have as yet not been successful in using for a test-method the iodine remaining in solution.

The precipitates and quantities differ when a solution of iodide of mercury in iodide of potassium is used in place of corrosive sublimate.

I use this test in examining narcotic extracts by diffusing the extract in dilute acid, decolorising by charcoal, if the alkaloid be non-volatile, with the aid of heat, and filtering. The coloring matter carried down mechanically does not interfere with the accuracy of the test.

From extracts containing volatile alkaloids I remove the chlorophyll after acidulating, then supersaturate with caustic potassa, shake with chloroform, pour into a funnel in which the chloroformic solution is allowed to settle, draw off and evaporate the latter without artificial heat, after adding a few drops of hydrochloric acid. The remaining hydrochlorate is tested after dilution to a certain bulk.

In examining opium and cinchona I have met with great difficulty on account of the evidently incorrect statements of the books in reference to the solubility of their alkaloids in various

solvents and precipitants; and it is to be hoped that the method of which I have indicated the principle will enable us to procure more accurate data.

Pharmaceutists possessing no metrical graduates or tubes can use the Troy ounce and scales for the testing of their alkaloids.

1000 fluid grammes or cubic centimetres of the tenth normal solution of iodohydrargyrate of potassium contain 10 grammes of mercury or 13·55 of chloride.

A solution of 135½ grains of corrosive sublimate and 498 grains of iodide of potassium in 9366½ grains of water will answer the same purpose. Instead of 10,000 grains of test liquid, 6000 grains may be prepared, which is just 12½ ounces Troy weight containing 6-10ths of the above amounts of sublimate and iodide of potassium.

10 grains of this solution are equal to 0·253 of a grain of sulphate of morphia, or 0·148 of a grain of sulphate of quinia.

REMARKS ON THE ALKALOIDS OF HYDRASTIS CANADENSIS AND XANTHORRHIZA APIIFOLIA.

BY WILLIAM S. MERRILL, A. M.

I hoped to be able to attend the approaching meeting of the American Pharmaceutical Association, but find I shall not be able to leave home. I have therefore forwarded to you a small package of samples, chiefly products obtained from the Hydrastis, and request you will present them to the Association for their examination.

In a business letter to Prof. Parrish, some months ago, I briefly mentioned these. I was not publishing an analysis or writing an essay, but briefly stated the fuller results of our experiments, of which I had previously sent him some samples; and I expressed a willingness to have these statements published in the American Journal of Pharmacy, as they contained some facts that I did not suppose had been previously announced. Under these circumstances, I certainly thought

some portion of the Editor's criticism of the article quite uncalled for.

Our examination of the hydrastis was principally made last fall, and I then knew nothing of the analysis of Durand, further than stated in U. S. D., which concludes by saying, "He also discovered a peculiar nitrogenous crystallizable substance for which he proposes the provisional name 'Hydrastin,' until it shall be determined whether it be, as he suspects, an organic alkali." This is certainly very indefinite, and does not even make it certain which of the two alkaloid bases it was which he discovered.

On the 6th of Feb. last, when sending to Prof. Parrish some samples of xanthoxylum bark and other articles for the cabinet which the Pharmaciens of Philadelphia were getting up for exhibition at the World's Fair, I enclosed with them specimens of *Hydrastina* and *Mur. Hydrastia*, which we had obtained, and briefly mentioned their leading properties. These were placed in the College cabinet, and there, the Editor of the Journal, had seen them so labelled, and referred to them in his note to the article of Dr. Mahla in the number for March. He certainly must have forgotten this, when in his criticism of July, speaking of my report that "the Hydrastis contains *two* distinct alkaloids, which we name Hydrastia and Hydrastina," he says "this assumption is to be discountenanced," because I did not acknowledge the analysis of Durand, and Mahla and Perrins, as previous discoveries. Mr. Durand had discovered but one of these bases, and that hypothetically, and Dr. Mahla's article, which had not then appeared, speaks of but one. The articles of J. Dyson Perrins indeed recognise two, but these were not published in London until the April and May following, and I had seen nothing of them until their appearance in the same number of the Journal with the extract of my letter to Prof. Parrish.

It is evident in regard to all of us that our investigations were entirely independent of the others, and thus far *original*, whichever may be entitled to credit in point of time.

I certainly have no wish to arrogate to myself the merits of other men's skill or discoveries, although I may be remiss in keeping myself posted in regard to them. And lest I be again accused of any such injustice, I beg leave here to state, I have

not conducted these recent experiments alone. Fifteen years ago I first introduced to the medical profession, the Podophyllin, Macrotin, Leptandrin, and some others of that class of agents known as the "Resinoids" or "Concentrated remedies," and set the ball rolling in that direction. But the extensive mercantile and manufacturing business in which, in company with my brother, I became engaged, has since so engrossed my attention that I have found no time for the careful labors of chemical investigation and analysis. We have long felt, however, that many of that class of agents must be greatly improved and perfected by accurate and scientific analysis, or else be rejected from the list of medicinal agents, and have fully appreciated the wide field opened in vegetable materia medica, which, whatever may be our ability, we had no time to cultivate. We have, therefore, employed as an assistant in our laboratory, Prof. H. D. Garrison, a chemist of no mean acquirements, and while he works under our direction, and a good portion of the particular experiments and the steps pursued are at my suggestion, the *manipulations* are almost all performed and the results obtained by him.

In commencing our investigations, therefore, one of the first articles we took up was the hydrastis; and we thought we had acquired a pretty accurate knowledge of its constitution, and had briefly reported the result, when Prof. Parrish, in his letter of March 8th, acknowledging the receipt of the specimens, says: "The Hydrastina, and Muriate of 'Hydrastia', (Berberina,) and the salt of Sanguinarina are very acceptable, and are placed in the College cabinet, and adds, 'I suppose you have seen the late analysis of a Chicago chemist, transferred to the American Journal of Pharmacy for the current month. This whole subject of the proximate principles of the hydrastis requires further ventilation."

In fact, however, I had not seen the article of Dr. Mahla referred to, and the above word in parenthesis was the first intimation I had that the alkaloid I had named Hydrastia, was identical with berberina. The analysis of Mahla was not entirely satisfactory, and I immediately set about having this point further investigated.

From some brief experiments, too crude to be reported as a

scientific analysis, I had a long time before satisfied myself that the yellow coloring principle of the xanthorrhiza was the same as that of the berberis, but did not suspect their identity with that of the hydrastis.

To determine this question, we prepared crystallized specimens of the muriate of berberina, and of our hydrastia, and subjected them to a series of comparative experiments, and these *then* led us to the conclusion, that although similar, they were not identical. Among these experiments were the following:

1st. Equal quantities of these muriates were dissolved in a dilute solution of potassa. That of hydrastia remained unchanged in color, whilst that of berberina became hyacinth red, and these colors remained at the end of five days.

2d. Equal portions were dissolved in equal quantities of boiling alcohol. On cooling, the muriate of hydrastia soon formed large stellar crystals, and when cold became semi-solid. The berberina solution when cold, showed only a cloud of extremely fine crystals. And as far as tried, this salt of berberina appeared more soluble in all cold monstrua, than that of the hydrastia.

3d. To equal solutions in alcohol, tincture of iodine was added. In the hydrastia solution large crystals soon appeared, and continued to form until the whole was a solid mass. Those under the microscope appear long, slender, and bright yellow. The berberina solution slowly evolved fine crystals, much less copiously, and these under the microscope have a *brownish* hue.

The behaviour with iodide of potassium was much the same, and the distinctions similar.

4th. Equal solutions were treated with neutral acetate of lead. Both gave copious yellow precipitates, but that of the berberina appeared perfectly amorphous under the microscope (of 150 diam.) while that of the hydrastia was resolved into a mass of silky crystals.

Several other similar tests were applied, some of which showed no appreciable difference between the two salts, while in others differences were discovered that tended to confirm the conclusions drawn from the above, and named in our letter of June, viz., that the two bases were not identical. We did not resort to ultimate analysis, for want of suitable apparatus.

We have not been able to repeat or extend these experiments for want of suitable material from which to prepare a better specimen of berberina. But we have since prepared the muriate of the alkaloid base of the xanthorrhiza, of which we send you a sample labelled , "mur. *xanthia*," and this we have satisfied ourselves is identical with that of the hydrastia, and this fact, together with the analyses of Mahla and Perrins, leads us to believe our experiments above stated to be delusive, in consequence of some imperfection in our preparation of the berberina, of which we had but a small quantity. Hence we admit the conclusion of Mr. Perrins, that the yellow coloring principle of the hydrastis, the berberis, and the xanthorrhiza, are in all probability identical.

What then is the appropriate name of this beautiful alkaloid? The hydrastis is by far its most copious source, and that from which it will, no doubt, be chiefly obtained; and on this account should have the preference in giving it its name. Moreover, its salts will, without doubt, become important agents in the materia medica, and it is very desirable on this account that its name should point to the plant from which it is derived. These I think strong arguments, especially the latter, in favor of the name "Hydrastia," which I proposed for it. On the other hand, the other alkaloid, which as yet is known to be found in this plant only, must naturally receive its name from it, and the similarity between the names hydrastia and hydrastina may lead to confusion and mistakes. It may also be considered partial to derive from one plant the name for a principle that is found in several. If these objections should be considered paramount, then I suggest for it the name *xanthia,* from the Greek xanthos, —yellow,—a most appropriate name, as it is the only alkaloid known of a bright yellow color.

But although this article is already sufficiently extended, I have not yet reported the processes by which we have obtained these preparations. These are in general indicated in the essays of Mahla and Perrins. But without going over the various experiments we have tried, and the possible processes that may be pursued, I will briefly state those which we have found most simple and eligible.

1st. The ground root may be exhausted, (and this is best

done by percolation,) either by alcohol, dilute spirit, or even water.

If it is desired to obtain and preserve the dark resinoid principle which is abundant in the root, and is not without some medicinal value, then alcohol of ordinary strength must be used, adding water at the last to drive out the spirit that it may be recovered. The alcohol must then be distilled off, and the resinoid, (which should be named hydrastin,) be allowed to settle, and be removed and dried.

2d. To the clear solution, whether obtained by alcohol or water, add hydrochloric acid, as long as a precipitate is formed, or until the liquid is distinctly sour.

This combines with both bases, but the muriate of hydrastia (or xanthia) being sparingly soluble in water, or cold alcohol is precipitated as a bright yellow powder, and is collected and washed on a filter. A precipitate may be obtained by other acids, and by many salts, especially the muriates, but the most satisfactory results are by free muriatic acid. The impure muriate thus obtained is purified by dissolving it in hot alcohol, and treating it with animal charcoal, as described by others. The clear solution on cooling crystallizes in beautiful acicular yellow crystals.

From this all the other salts are readily obtained by processes that will suggest themselves to every chemist. They mostly crystallize in needle-shaped or feathery crystals, and are all of a brilliant yellow color.

A little of the pure base *hydrastia* was obtained by withdrawing the acid from the sulphate by baryta, or what succeeded better in our hands, by oxide of lead. The pure alkaloid is uncrystallizable, but combines readily with all acids which we have presented to it.

The other alkaloid which we had named "hydrastina," is still in the mother liquor. From this it is precipitated in its basic condition by an alkali, say soda or ammonia, which combines with its organic acid, or the hydrochloric acid with which it is now combined, and let it fall as a greyish white powder, as it is wholly insoluble in cold aqueous fluids. This is purified by repeated solution in boiling alcohol, and crystallization from it on cooling. It crystallizes in large, quadrangular prisms, with very acute pyramidal summits, and when pure are white or

colorless. Although itself is quite insoluble in water, and is easily crystallized, it readily combines with all the acids, and forms salts that are very soluble, and difficultly, if at all, crystallizable : presenting in these respects exactly the reverse of the other alkaloid.

When the preservation of the resinoid principle is not desired, these alkaloids may be more economically obtained by exhausting the ground root with dilute sulphuric acid, instead of alcohol, as the sulphates of both of them are readily soluble, but the process is somewhat more circuitous and complicated, an I will not extend this already too long paper to describe it.

We have isolated the organic acid with which these bases are combined in their normal state, but not in sufficient quantity or purity to enable us to determine whether it be a distinct principle, or is identical with some of the vegetable acids already known. If time permits, we will investigate that matter farther.

Cincinnati, August 25th, 1862.

CONSTITUTION

OF THE

AMERICAN PHARMACEUTICAL ASSOCIATION.

PREAMBLE.

Whereas, The advancement of pharmaceutical knowledge, and the elevation of the professional character of Apothecaries and Druggists throughout the United States, are dear to us in common with all well-disposed pharmaceutists; and *whereas*, a large portion of those in whose hands the practice of pharmacy now exists, are not properly qualified for the responsible offices it involves, chiefly by reason of the many difficulties that impede the acquirement of a correct knowledge of their business:

Therefore, We, the members of a Convention now met at Philadelphia, [September, 1852,] composed of Apothecaries and Druggists from different sections of the Union, and from all the Colleges and Societies therein existing, with the object of deliberating on the condition of our profession, do hereby resolve and constitute ourselves into a permanent Association, to meet annually, at such times and places as may hereafter be determined, for more effectually accomplishing the objects for which we are now assembled, and do now adopt the following

CONSTITUTION.

Article I.

This Association shall be called the "American Pharmaceutical Association." Its aim shall be to unite the educated and reputable Pharmaceutists and Druggists of the United States in the following objects:

1. To improve and regulate the drug market, by preventing the importation of inferior, adulterated or deteriorated drugs, and by detecting and exposing home adulteration.

2. To establish the relations between Druggists, Pharmaceutists, Physicians, and the people at large, upon just principles, which shall promote the public welfare, and tend to mutual strength and advantage.

3. To improve the science and the art of pharmacy by diffusing scientific knowledge among Apothecaries and Druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug business.

4. To regulate the system of apprenticeship and employment so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling medicines.

5. To suppress empiricism, and, as much as possible, to restrict the dispensing and sale of medicines to regularly educated Druggists and Apothecaries.

ARTICLE II.—*Of the Members.*

Section 1. Every Pharmaceutist or Druggist of good moral and professional standing, whether in business on his own account, retired from business, or employed by another, who, after duly considering the objects of the Association and the obligations of its Constitution, is willing to subscribe to them, is eligible to membership.

Section 2. The mode of admission to membership shall be as follows:—Any person eligible to membership may apply to any member of the Executive Committee, who shall report his application to the said Committee. If, after investigating his claims, they shall approve his election, they shall, at the earliest time practicable, report his name to the Association, and he may be elected by two-thirds of the members present, on ballot. Should an application occur in the recess, the members of the Committee may give their approval in writing, which, if unanimous, and endorsed by the President, shall constitute him a member, and the fact be reported to the Association at the next succeeding meeting.

Section 3. No person shall become a member of this Association until he shall have signed the Constitution, and paid his annual

contribution for the current year. All persons who become members, shall be considered as permanent members, but may be expelled, for improper conduct, by a vote of two-thirds of the members present at any annual meeting.

Section 4. Every member shall pay into the hands of the Treasurer the sum of two dollars, as his yearly contribution, and is liable to lose his right of membership by neglecting to pay said contribution for three successive years. Members shall be entitled, on the payment of three dollars, to receive a certificate of membership, signed by the President, Vice Presidents, and Secretary, covenanting to return the same to the proper officer on relinquishing their connection with the Association.

Section 5. Every local Pharmaceutical Association shall be entitled to five delegates in the annual meetings, who, if present, become members of the Association, on signing the Constitution, without being ballotted for.

Section 6. Pharmaceutists, Chemists, and other scientific men who may be thought worthy of the distinction may be elected honorary members upon the same conditions and under the same rules as appertain to active members. They shall not, however, be required to contribute to the funds, nor shall they be eligible to hold office, or to vote at the meetings.

Section 7. Members who have paid their annual contributions for ten successive years shall be considered life members, and exempt from their yearly payments, and entitled to a certificate to that effect.

ARTICLE III.—*Of the Officers.*

Section 1. The officers shall be, a President two or more Vice-Presidents, a Recording Secretary, a Corresponding Secretary, and a Treasurer, who shall be elected annually, and shall hold office until an election of successors.

Section 2. The President shall preside at the meetings, and administer the rules of order usual in deliberative assemblies. He shall nominate all special committees, except a majority of the members present direct a resort to balloting, or other means.

He shall sign the certificates of membership, approve all foreign correspondence, and countersign orders on the Treasurer.

He shall present at each annual meeting a report of the operations of the Association during the year, with such information pertaining to its condition and prospects, and the object it has in view, together with such suggestions for its future management, as may seem to him proper.

Section 3. In case of the temporary absence or inability of the President, his duties shall devolve on one of the Vice Presidents, in the order of their names.

Section 4. The Recording Secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays, and papers of every description received by the Association, copies or abstracts of which shall be furnished for publication as may be required.

He shall furnish the chairman of every special committee with a list of its members, and a copy of the minute of its appointment, and shall notify every member of the time and place of each annual meeting. He shall be a member of the Executive Committee.

Section 5. The Corresponding Secretary shall conduct all correspondence directed by the Association, and reply to all communications addressed to it in its recess. He shall, from time to time, address local Associations, members and others possessed of information likely to be of interest to the Association, and report such correspondence to the Committee on the Progress of Pharmacy, of which he shall be a member.

Section 6. The Treasurer shall collect and take charge of the funds of the Association, and shall also hold and issue the certificates of membership. He shall pay no monies, unless by the order of the chairman of one of the standing or of a special committee, authorized to appropriate funds of the Association, such order to be countersigned by the President.

He shall present a statement of his accounts at each annual meeting, that they may be audited. He shall also report to the Executive Committee, previous to each annual meeting, the names of such members as have failed to pay their annual contributions for three years, and also the names of such as have failed to return their certificates of membership after having been officially disconnected with the Association, and duly notified to do so.

ARTICLE IV.—*Of the Standing Committees.*

Section 1. There shall be two standing committees elected annually—an Executive Committee, and a Committee on the Progress of Pharmacy. They shall each consist of five members, and shall elect their own Chairman.

Section 2. The Executive Committee, of which the Recording Secretary shall be one of the members, shall have charge of the revision of the roll, the investigation of applications for membership, the election of members in the recess, and the publication of the Proceedings. They shall report at each meeting a revised roll of members, with appropriate notices of deceased members; also the names of any who, having become disconnected with the Association, refuse to return their certificates of membership, as provided by this Constitution.

The annual publication of the Proceedings shall contain the corrected roll of members, full minutes of the several sittings, the Reports of the President and of the Committees, together with such addresses, scientific papers, discussions, notices of new processes, and preparations, as the Executive Committee may deem worthy of insertion. At least one copy shall be furnished each member of the Association.

Section 3. The Committee on the Progress of Pharmacy, of which the Corresponding Secretary shall be one of the members, shall report annually to the Association on the improvements in Chemistry, Practical Pharmacy and the collateral branches, on any new works bearing on these subjects published in this country or in Europe, on the condition of the drug-market, and the quality of drugs and manufactured articles, whether of foreign or domestic production, found in commerce.

ARTICLE V.—*Of the Meetings.*

Section 1. The meetings shall be held annually, or as the Association may from time to time determine; provided that, in case of failure of this from any cause, the duty of calling the Association together shall devolve upon the President, or one of the Vice-Presidents, with the advice and consent of the Executive Committee.

Section 2. At the opening of each annual meeting, the President, or, in case of his absence, one of the Vice-Presidents, shall call the meeting to order, and preside until after an election of officers. In case the President and Vice Presidents are absent, this duty shall devolve on the Chairman of the Executive Committee, or, in his absence, on any member chosen by vote of those present.

In the absence of the Recording Secretary, the President shall appoint a Secretary, pro tempore.

The order of business at the first session of each annual meeting shall be as follows:

1st. The appointment by the President of a committee of three persons to examine credentials, and report the names of those duly accredited.

2d. The Executive Committee shall report the names of new members, and of persons present, recommended for membership, who shall be immediately ballotted for.

3d. The roll of those in attendance, as thus completed, shall be called by the Secretary.

4th. The reports of the Standing and Special Committees shall be read by their titles, or in full, and laid on the table for future consideration.

5th. A committee to nominate officers for the ensuing year shall be appointed, consisting of one nominated by each delegation in attendance, and three members appointed by the President, from among those not delegated, to report at the opening of the next session.

The first session shall close with the reading of the President's annual report, and referring any portions requiring the action of Committees.

After the first session, the order of business shall be determined by the nature of the subjects presented, and by the consent of the majority.

Section 3. During periods fixed by vote for scientific discussion and the exhibition of specimens and processes, the ordinary rules of parliamentary bodies shall be suspended, but, at other times, shall be enforced by the presiding officer, from whose

decisions, however, appeals may be taken if required by five members, and the meeting shall thereupon decide without debate.

A motion reduced to writing, and seconded, shall be open to discussion, and, while it is before the meeting, no motion shall be received, unless to amend, divide, commit, to lay on the table, postpone or to adjourn; and a motion to adjourn shall be decided without debate.

On the call of any member, the yeas and nays shall be ordered, when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the Minutes.

Article VI.

This Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereupon.

Forms to be signed by Applicants for Membership.

Approving of the objects of the American Pharmaceutical Association, I am desirous of joining it in membership; and having read its Constitution, I hereby signify my approval of it, and subscribe to it.

....

I hereby agree to return my certificate of membership in the American Pharmaceutical Association to the Treasurer of that body, if I shall hereafter cease to be connected in membership with it.

....

Testimonials.

The undersigned being personally acquainted with testify to his moral character, his skill as a practical Druggist and Pharmaceutist, and his professional probity and good standing, and they recommend him for membership in the American Pharmaceutical Association.

Name.	Profession.	Address.

The undersigned, Executive Committee of the American Pharmaceutical Association, approve the election of

to membership.

Approved.

________________________ *President.*

Date.

HONORARY MEMBERS.

Daniel B. Smith,	Philadelphia,	Pennsylvania,	1856
Thomas Farrington,	Boston,	Massachusetts,	1856
Montgomery J. Bailey, M.D.,	New York,	New York,	1856
George B. Wood, M. D.,	Philadelphia,	Pennsylvania,	1857
Franklin Bache, M. D.,	Philadelphia,	Pennsylvania,	1857
Elias Durand,	Philadelphia,	Pennsylvania,	1857

ROLL OF MEMBERS.

(Deceased Members in Italics.)

Henry T. Cummings,	Portland,	Maine,	1853
Edmund Dana, Jr.,	Portland,	Maine,	1859
Walter F. Phillips,	Portland,	Maine,	1859
William Atwood,	Portland,	Maine,	1859
Sargent P. Coe,	Portland,	Maine,	1859
N. S. Harlow,	Bangor,	Maine,	1860
John G. Cook,	Lewiston,	Maine,	1859
William Baker,	Brunswick,	Maine,	1859
J. R. Carpenter,	Calais	Maine,	1861
Charles A. Tufts,	Dover,	New Hampshire,	1856
O. Gilman Dort,	Keene,	New Hampshire,	1858
Charles A. Merrill,	Exeter,	New Hampshire,	1858
George S. Kendrick,	Lebanon,	New Hampshire,	1858
Joseph H. Thacher,	Portsmouth,	New Hampshire,	1859
Edward H. Rollins,	Concord,	New Hampshire,	1859
John F. Rollins,	Concord,	New Hampshire,	1859
Julius Ceno	Concord,	New Hampshire,	1859

James Morgan,	Concord,	New Hampshire,	1859
George Moore,	Great Falls,	New Hampshire,	1859
Rufus W. Stevens,	Great Falls,	New Hampshire,	1859
George L. Dearborn,	New Market,	New Hampshire,	1855
S. P. Peck,	Bennington,	Vermont,	1853
J. C. Bingham,	St. Johnsbury,	Vermont,	1853
Chauncy L. Case,	Brandon,	Vermont,	1859
E. A. Morse,	Rutland,	Vermont,	1859
E. A. Pond,	Rutland,	Vermont,	1859
L. L. Dutcher,	St. Albans,	Vermont,	1859
Frederick Dutcher,	St. Albans,	Vermont,	1859
Samuel M. Colcord,	Boston,	Massachusetts,	1852
Samuel R. Philbrick,	Boston,	Massachusetts,	1852
Daniel Henchman,	Boston,	Massachusetts,	1853
Thomas Restieaux,	Boston,	Massachusetts,	1853
Andrew Geyer,	Boston,	Massachusetts,	1853
T. Larkin Turner,	Boston,	Massachusetts,	1853
Henry W. Lincoln,	Boston,	Massachusetts,	1853
Joseph Burnet,	Boston,	Massachusetts,	1852
William A. Brewer,	Boston,	Massachusetts,	1853
Thomas Hollis,	Boston,	Massachusetts,	1853
Ashel Boyden,	Boston,	Massachusetts,	1853
Henry D. Fowle,	Boston,	Massachusetts,	1853
James S. Melvin,	Boston,	Massachusetts,	1855
William W. Goodwin,	Boston,	Massachusetts,	1853
Charles T. Carney,	Boston.	Massachusetts,	1853
Robert R. Kent,	Boston,	Massachusetts,	1855
Alvah Littlefield,	Boston,	Massachusetts,	1856
Augustus P. Melzar,	Boston,	Massachusetts,	1856
Charles H. Atwood,	Boston,	Massachusetts,	1856
James Gordon,	Boston,	Massachusetts,	1857
Theodore Metcalf,	Boston,	Massachusetts,	1857
David Roberts,	Boston,	Massachusetts,	1858
William Brown,	Boston,	Massachusetts,	1858
Oliver H. Webber,	Boston,	Massachusetts,	1858
George D. Towne,	Boston,	Massachusetts,	1858
D. B. Kidder,	Boston,	Massachusetts,	1858
Andrew R. Fox,	Boston,	Massachusetts,	1858
Granville M. Clark,	Boston,	Massachusetts,	1858
George D. Ricker,	Boston,	Massachusetts,	1858

C. H. Lyon, Jr.,	Boston,	Massachusetts,	1858
I. Bartlett Patten,	Boston,	Massachusetts,	1858
Leopold Babo,	Boston,	Massachusetts,	1859
John C. Howe,	Boston,	Massachusetts,	1859
Levi G. Dodge,	Boston,	Massachusetts,	1859
William J. Cutler,	Boston,	Massachusetts,	1859
E. Waldo Cutler,	Boston,	Massachusetts,	1859
B. F. Brown,	Boston,	Massachusetts,	1859
William D. Miller,	Boston,	Massachusetts,	1859
Theodore S. Harris,	Boston,	Massachusetts,	1859
George H. Chapman,	Boston,	Massachusetts,	1859
Theodore Wheeler,	Boston,	Massachusetts,	1859
Orlando Tompkins,	Boston,	Massachusetts,	1859
Isaac T. Campbell,	Boston,	Massachusetts,	1859
Thomas Doliber	Boston,	Massachusetts,	1859
Charles Clarke,	Boston,	Massachusetts,	1859
G. C. Wilson,	Boston,	Massachusetts,	1859
B. O. Wilson,	Boston,	Massachusetts,	1859
John T. Brown,	Boston,	Massachusetts,	1859
Michael H. Gleeson,	Boston,	Massachusetts,	1859
James A. Gleeson,	Boston,	Massachusetts,	1859
Joseph T. Brown,	Boston,	Massachusetts,	1859
Moses D. Colby,	Boston,	Massachusetts,	1859
George Woodbridge,	Boston,	Massachusetts,	1859
Samuel H. Woods,	Boston,	Massachusetts,	1859
Henry Warren,	Boston,	Massachusetts,	1859
John Butterworth,	Boston,	Massachusetts,	1860
Joshua G. Wilbur,	Boston,	Massachusetts,	1860
Elijah Smalley,	Boston,	Massachusetts,	1860
Levi Tower, Jr.,	Boston,	Massachusetts,	1860
Edward H. Fernald,	Boston,	Massachusetts,	1860
Thomas S. Maffitt,	Boston,	Massachusetts,	1861
Laban Beal,	Boston,	Massachusetts,	1861
Benj. Gilpatrick, Jr.,	Boston,	Massachusetts,	1862
Emery Souther,	Boston,	Massachusetts,	1856
Abraham S. Wiley,	Cambridgeport,	Massachusetts,	1857
Henry Thayer,	Cambridgeport,	Massachusetts,	1858
William Gay,	Cambridgeport,	Massachusetts,	1858
A. R. Bailey,	Cambridgeport,	Massachusetts,	1859
A. H. Ramsey,	Cambridgeport,	Massachusetts,	1859

Joel S. Orne,	Cambridgeport,	Massachusetts,	1859
Francis D. Hardy, Jr.,	Cambridgeport,	Massachusetts,	1859
David Scott,	Worcester,	Massachusetts,	1855
Nelson R. Scott,	Worcester,	Massachusetts,	1859
James L. Burbank,	Worcester,	Massachusetts,	1859
M. S. McConville,	Worcester,	Massachusetts,	1859
Anthony S. Jones,	Newburyport,	Massachusetts,	1853
Charles A. Nolcini,	Newburyport,	Massachusetts,	1858
Samuel A. Smith,	Newburyport,	Massachusetts,	1859
John Buck,	Chelsea,	Massachusetts,	1855
Charles E. Field,	Chelsea,	Massachusetts,	1859
John Lynam,	Chelsea,	Massachusetts,	1860
Edw. G. Frothingham, Jr.,	Haverhill,	Massachusetts,	1859
George A. Kimball,	Haverhill,	Massachusetts,	1859
H. M. Whitney,	Lawrence,	Massachusetts,	1860
B. K. Bliss,	Springfield,	Massachusetts,	1859
Edmund Bigelow,	Springfield,	Massachusetts,	1859
Daniel F. White,	Charlestown,	Massachusetts,	1859
Benjamin F. Stacey,	Charlestown,	Massachusetts,	1860
C. C. Bixby,	N. Bridgewater,	Massachusetts,	1859
Warren Tapley,	Lynn,	Massachusetts,	1859
Benjamin Proctor,	Lynn,	Massachusetts,	1859
David Howath,	Andover,	Massachusetts,	1862
Thomas A. Sweetser,	South Danvers,	Massachusetts,	1859
James Emerton,	Salem,	Massachusetts,	1859
John B. Arnold,	Fitchburgh,	Massachusetts,	1859
James B. Lane,	Fitchburgh,	Massachusetts,	1853
Francis O. Bigelow,	Medford,	Massachusetts,	1859
Samuel Kidder, Jr.,	Lowell,	Massachusetts,	1859
Charles E. Savelle,	Roxbury,	Massachusetts,	1860
Joseph L. Moffatt,	Roxbury,	Massachusetts,	1859
Francis Tinker,	Leominster,	Massachusetts,	1860
F. A. Weber,	Woonsocket,	Massachusetts,	1860
Charles F. Rogers,	Newton,	Massachusetts,	1860
C. M. Whildon,	Pittsfield,	Massachusetts,	1860
Dexter D. Geyer,	Gloucester,	Massachusetts,	1857
William H. Ware,	Gloucester,	Massachusetts,	1859
Eben Blatchford,	Rockport,	Massachusetts,	1857
B. W. Conant,	Woburn,	Massachusetts,	1858
George W. Berrian, Jr.,	North Andover,	Massachusetts,	1857

Robert J. Taylor,	Newport,	Rhode Island,	1859
Albert L. Calder,	Providence,	Rhode Island,	1859
Alfred C. Dana,	Providence,	Rhode Island,	1859
Albert J. Congden,	East Greenwich,	Rhode Island,	1860
Henry F. Fish,	Waterbury,	Connecticut,	1852
Nathan Dikeman,	Waterbury,	Connecticut,	1859
James M. B. McNary,	Hartford,	Connecticut,	1859
Thomas Sisson,	Hartford,	Connecticut,	1860
Samuel E. Noyes,	New Haven	Connecticut,	1859
E. E. Knapp,	Norwalk,	Connecticut,	1860
Nathan F. Peck,	Willimantic,	Connecticut,	1861
Llewellyn S. Haskell,	New York City,	New York,	1852
George D. Coggeshall,	New York City,	New York,	1852
John Meakim,	New York City,	New York,	1852
Eugene Dupuy,	New York City,	New York,	1852
C. B. Guthrie,	New York City,	New York,	1852
Junius Gridley,	New York City,	New York,	1853
James S. Aspinwall,	New York City,	New York,	1855
Benjamin Canavan,	New York City,	New York,	1855
John Canavan,	New York City,	New York,	1855
John Milhau,	New York City,	New York,	1855
John P. Dodge,	New York City,	New York,	1855
F. A. Hegeman,	New York City,	New York,	1855
James T. Maxwell,	New York City,	New York,	1855
Isaac Coddington,	New York City,	New York,	1855
Frederick Hale,	New York City,	New York,	1855
Frederick Thompson,	New York City,	New York,	1856
H. T. Kiersted,	New York City,	New York,	1856
William F. Henry,	New York City,	New York,	1856
John P. Dodge,	New York City,	New York,	1856
J. W. Bowers,	New York City,	New York,	1857
George Syme,	New York City,	New York,	1857
Henry Haviland,	New York City,	New York,	1857
George W. De la Vergne,	New York City,	New York,	1857
John Faber,	New York City,	New York,	1857
Alexander Cushman,	New York City,	New York,	1858
William J. Oliffe,	New York City,	New York,	1858
Thomas T. Green,	New York City,	New York,	1858
Ray B. Easterbrook,	New York City,	New York,	1858
Henry King,	New York City,	New York,	1858

William Egerton,	New York City,	New York,	1858
William M. Somerville,	New York City,	New York,	1858
Henry A. Cassebeer,	New York City,	New York,	1858
Edward L, Milhau,	New York City,	New York,	1858
Lewis T. Lazell,	New York City,	New York,	1858
Edward H. Marsh,	New York City,	New York,	1858
John H. Currie,	New York City,	New York,	1858
Andrew J. Parker,	New York City,	New York,	1858
Samuel N. Stebbins,	New York City,	New York,	1858
Henry R. Haydock,	New York City,	New York,	1858
Lucian F. Wheeler,	New York City,	New York,	1858
John C. Hart,	New York City,	New York,	1858
Robert A. Sands,	New York City,	New York,	1858
William Hegeman,	New York City,	New York,	1858
Fred. V. Rushton,	New York City,	New York,	1858
John D. Dix,	New York City,	New York,	1858
William A. Gellatly,	New York City,	New York,	1858
J. H. Westerfield,	New York City,	New York,	1858
Walton S. Coon,	New York City,	New York,	1858
Henry Kiersted,	New York City,	New York,	1858
Raymond Gravrend,	New York City,	New York,	1859
L. Leroy,	New York City,	New York,	1859
Henry Steele,	New York City,	New York,	1859
William Wright, Jr.,	New York City,	New York,	1859
James H. Anderson,	New York City,	New York,	1859
P. Wendover Bedford,	New York City,	New York,	1859
John W. Shedden,	New York City,	New York,	1859
W. Neergaard,	New York City,	New York,	1859
F. F. Mayer,	New York City,	New York,	1859
Corydon E. Tyler,	New York City,	New York,	1859
Alexander V. Blake,	New York City,	New York,	1860
J. Weaver,	New York City,	New York,	1860
Samuel J. Billings,	New York City,	New York,	1860
William J. Watson,	New York City,	New York,	1860
William M. Giles,	New York City,	New York,	1860
John Carle, Jr.,	New York City,	New York,	1860
Jesse M. Sands,	New York City,	New York,	1860
Jabez H. Hazard,	New York City,	New York,	1860
Jesse Weaver,	New York City,	New York,	1860
George W. Southwick,	New York City,	New York,	1860

E. L. Johnson,	New York City,	New York,	1860
William J. Darbey,	New York City,	New York,	1860
Theodore Schumann,	New York City,	New York,	1860
Otto Laist,	New York City,	New York,	1860
George G. Porter,	New York City,	New York,	1860
George E. Sheils,	New York City,	New York,	1860
Warren B. Gardiner,	New York City,	New York,	1860
Gustav Ramsperger,	New York City,	New York,	1860
Augustine Presinger,	New York City,	New York,	1860
George S. Peduzzi,	New York City,	New York,	1861
B. H. Reinold,	New York City,	New York,	1861
Adolph G. Dunn,	New York City,	New York,	1862
James S. Higgins,	New York City,	New York,	1862
Theobald Frohwein,	New York City,	New York,	1862
W. Fisher,	New York City,	New York,	1862
A. W. Gabaudan,	New York City,	New York,	1862
Daniel C. Robbins,	New York City,	New York,	1862
Tristram W. Metcalf,	Brooklyn,	New York,	1857
Alexander Hudnut,	Brooklyn,	New York,	1857
John M. Maisch,	Brooklyn,	New York,	1857
Thomas Whitehorn,	Brooklyn,	New York,	1858
Edward R. Squibb,	Brooklyn,	New York,	1858
Robert J. Davies,	Brooklyn,	New York,	1858
George F. Ayling,	Brooklyn,	New York,	1858
George C. Close,	Brooklyn,	New York,	1858
J. Lindley Pyle,	Brooklyn,	New York,	1859
Cyrus Pyle,	Brooklyn,	New York,	1859
Luther Atwood,	Brooklyn,	New York,	1859
William H. Page,	Brooklyn,	New York,	1860
Thomas Kingshorn,	Brooklyn,	New York,	1860
Peter D. Leys,	Brooklyn,	New York,	1860
L. S. Hubbard,	Brooklyn,	New York,	1860
Richard Forester,	Brooklyn,	New York,	1860
George C. Leys,	Brooklyn,	New York,	1860
W. E. P. Baylis,	Brooklyn,	New York,	1860
Richard J. Owens,	Brooklyn,	New York,	1860
John McDonald,	Brooklyn,	New York,	1860
Paul Balluff,	Brooklyn,	New York,	1860
Victor Heidenreich,	Brooklyn,	New York,	1860
Francis M. Bassett,	Brooklyn,	New York,	1861

John A. Niebrugge,	Brooklyn,	New York,	1861
S. F. Conway,	Brooklyn,	New York,	1862
R. S. McMurdy,	Albany,	New York,	1861
William H. MacRea,	Factoryville,	New York,	1861
S. G. Welling,	New Rochelle,	New York,	1860
William E. Hagan,	Troy,	New York,	1860
William G. Stephens,	Yonkers,	New York,	1860
Theodore Moith,	Fishkill Landing,	New York,	1860
H. A. Tilden,	New Lebanon,	New York,	1858
A. I. Mathews,	Buffalo,	New York,	1855
William H. Peabody,	Buffalo,	New York,	1857
H. A. Blauw,	Rochester,	New York,	1856
Alfred S. Lane,	Rochester,	New York,	1857
James T. King,	Middleton,	New York,	1859
George B. Fish,	Saratoga Springs,	New York,	1860
James Stratton,	Bordentown,	New Jersey,	1859
William Thomas,	Jersey City,	New Jersey,	1855
Alfred J. Shipley,	Jersey City,	New Jersey,	1859
Peter V. Coppuck,	Mount Holly,	New Jersey,	1857
A. S. White,	Mount Holly,	New Jersey,	1860
C. H. Dalrymple,	Morristown,	New Jersey,	1860
William Ball,	Elizabeth City,	New Jersey,	1860
Wm. J. Allinson,	Burlington,	New Jersey,	1862
Charles Ellis,	Philadelphia,	Pennsylvania,	1852
William Procter, Jr.,	Philadelphia,	Pennsylvania,	1852
Alfred B. Taylor,	Philadelphia,	Pennsylvania,	1852
Edward Parrish,	Philadelphia,	Pennsylvania,	1852
Peter J. Hassard,	Philadelphia,	Pennsylvania,	1853
Samuel S. Garrigues,	Philadelphia,	Pennsylvania,	1855
Henry C. Blair,	Philadelphia,	Pennsylvania,	1855
John H. Ecky,	Philadelphia,	Pennsylvania,	1856
Frederick L. John,	Philadelphia,	Pennsylvania,	1856
Thomas Weaver,	Philadelphia,	Pennsylvania,	1856
Dillwyn Parrish,	Philadelphia,	Pennsylvania,	1857
Samuel F. Troth,	Philadelphia,	Pennsylvania,	1857
Ambrose Smith,	Philadelphia,	Pennsylvania,	1857
Thomas P. James,	Philadelphia,	Pennsylvania,	1857
Charles Bullock,	Philadelphia,	Pennsylvania,	1857
Thomas S. Wiegand,	Philadelphia,	Pennsylvania,	1857
Samuel N. James,	Philadelphia,	Pennsylvania,	1857

Evan T. Ellis,	Philadelphia,	Pennsyivania,	1857
Louis M. Emanuel,	Philadelphia,	Pennsylvania,	1857
Wilson H. Pile,	Philadelphia,	Pennsylvania,	1857
Samuel S. Bunting,	Philadelphia,	Pennsylvania,	1857
T. Morris Perot,	Philadelphia,	Pennsylvania,	1857
Asher S. Leidy,	Philadelphia,	Pennsylvania,	1857
William H. Pratt,	Philadelphia,	Pennsylvania,	1857
Edward Donnelly,	Philadelphia,	Pennsylvania,	1857
Henry Steiner,	Philadelphia,	Pennsylvania,	1857
Hennell Stevens,	Philadelphia,	Pennsylvania,	1857
Samuel Chapman,	Philadelphia,	Pennsylvania,	1857
Edward H. Hance,	Philadelphia,	Pennsylvania,	1857
Charles H. Eggert,	Philadelphia,	Pennsylvania,	1857
George M. Snowden,	Philadelphia,	Pennsylvania,	1857
George Cooke,	Philadelphia,	Pennsyluania,	1857
William R. Warner,	Philadelphia,	Pennsylvania,	1857
O. S. Hubbell,	Philadelphia,	Pennsylvania,	1857
Henry N. Rittenhouse,	Philadelphia,	Pennsylvania,	1857
M. H. Kollock,	Philadelphia,	Pennsylvania,	1857
J. Lindsey O'Neal,	Philadelphia,	Pennsylvania,	1858
William J. Jenks,	Philadelphia,	Pennsylvania,	1858
E. Raphael Perot,	Philadelphia,	Pennsylvania,	1858
W. B. Thompson,	Philadelphia,	Pennsylvania,	1858
Thomas A. Lancaster,	Philadelphia,	Pennsylvania,	1859
Adolphus F. Neynaber,	Philadelphia,	Pennsylvania,	1859
Adam H. Wilson,	Philadelphia,	Pennsylvania,	1859
Benjamin F. Johnson,	Philadelphia,	Pennsylvania,	1859
J. A. Heintzelman,	Philadelphia,	Pennsylvania,	1858
Daniel S. Jones,	Philadelphia,	Pennsylvania,	1859
James T. Shinn,	Philadelphia,	Pennsylvania,	1860
George J. Scattergood,	Philadelphia,	Pennsylvania,	1860
Charles Shivers,	Philadelphia,	Pennsylvania,	1860
William Evans, Jr.,	Philadelphia,	Pennsylvania,	1860
Benjamin J. Crew,	Philadelphia,	Pennsylvania,	1860
J. Lewis Crew,	Philadelphia,	Pennsylvania,	1860
Henry Bower,	Philadelphia,	Pennsylvania,	1860
Thomas R. Coombe,	Philadelphia,	Pennsylvania,	1860
Abram Albergur, Jr.,	Philadelphia,	Pennsylvania,	1860
Edward R. Fell,	Philadelphia,	Pennsylvania,	1862
Frederick A. Keffer,	Philadelphia,	Pennsylvania,	1862

Frederick Rollman	Philadelphia,	Pennsylvania,	1862
George Y. Shoemaker,	Philadelphia,	Pennsylvania,	1862
John C. Savery,	Philadelphia,	Pennsylvania,	1862
George W. Mowbray,	Titusville,	Pennsylvania,	1860
Charles A. Bannvart,	Harrisburg,	Pennsylvania,	1856
William Heyser, Jr.,	Chambersburg,	Pennsylvania,	1856
Charles A. Heinitsch,	Lancaster,	Pennsylvania,	1857
Leander Neal,	Lancaster,	Pennsylvania,	1858
William H. Squire,	Germantown,	Pennsylvania,	1862
M. M. Selfridge,	Bethlehem,	Pennsylvania,	1858
Joseph L. Lemberger,	Lebanon,	Pennsylvania,	1859
E. T. Miller,	York,	Pennsylvania,	1858
J. B. Moore,	Danville,	Pennsylvania,	1860
Washington Laycock,	Danville,	Pennsylvania,	1857
J. A. Wolf,	Wrightsville,	Pennsylvania,	1860
Samuel K. Norgrave,	Pittsburg,	Pennsylvania,	1857
Geo. W. Weyman,	Pittsburg,	Pennsylvania,	1858
Charles H. Super,	Pittsburg,	Pennsylvania,	1858
Harmar D. Scully,	Pittsburg,	Pennsylvania,	1858
James E. Cunningham,	Pittsburg,	Pennsylvania,	1860
H. M. Pettit,	Pittsburg,	Pennsylvania,	1860
John D. Mattern,	Pittsburg,	Pennsylvania,	1860
Jacob T. Haehnlen, Jr.,	Pittsburg,	Pennsylvania,	1860
J. C. Hughes,	Pottsville,	Pennsylvania,	1862
A. W. Newton,	Bristol,	Pennsylvania,	1862
Henry W. Lesley,	Bristol,	Pennsylvania,	1862
W. M. Guilford,	Lebanon,	Pennsylvania,	1857
W. L. McCorkle,	Columbia,	Pennsylvania,	1857
A. H. Grimshaw,	Wilmington,	Delaware,	1858
John P. Toner,	Wilmington,	Delaware,	1859
Ferris Bringhurst,	Wilmington,	Delaware,	1862
A. P. Sharp,	Baltimore,	Maryland,	1855
David Stewart,	Baltimore,	Maryland,	1855
George W. Andrews,	Baltimore,	Maryland,	1856
James M. Bowers,	Baltimore,	Maryland,	1856
L. Phillips,	Baltimore,	Maryland,	1856
J. Jacob Smith,	Baltimore,	Maryland,	1856
Charles Caspari	Baltimore,	Maryland,	1856
John W. Barry,	Baltimore,	Maryland,	1856
J. H. Lemmon,	Baltimore,	Maryland,	1856

Joseph Roberts,	Baltimore,	Maryland,	1856
E. J. Russell,	Baltimore,	Maryland,	1856
J. Faris Moore,	Baltimore,	Maryland,	1856
Edward C. Gilpin,	Baltimore,	Maryland,	1856
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J. B. Baxley,	Baltimore,	Maryland,	1856
Samuel McPherson,	Baltimore,	Maryland,	1856
James Balmer,	Baltimore,	Maryland,	1856
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J. J. Thomsen,	Baltimore,	Maryland,	1856
James M. Bowers,	Baltimore,	Maryland,	1856
R. H. Dryden,	Baltimore,	Maryland,	1857
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OF

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FROM 1852 TO 1859 INCLUSIVE.

Arranged in accordance with a Resolution passed at the Meeting in September, 1860, held at New York.

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